

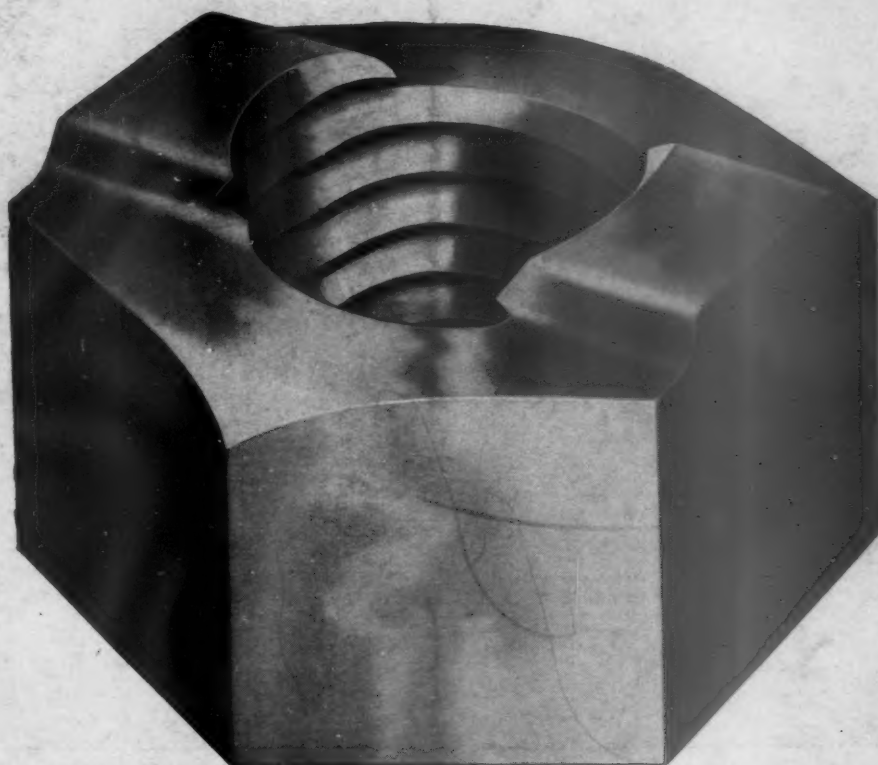
Railway Age

FIRST HALF OF 1920—NO. 7

NEW YORK—FEBRUARY 13, 1920—CHICAGO

SIXTY-FIFTH YEAR

Published weekly by Simmons-Boardman Pub. Co., Woolworth Bldg., New York, N. Y. Subscription Price, U. S. and Mexico, \$5.00 a year; Canada, \$6.00; foreign countries (excepting daily editions), \$8.00. Entered as second-class matter, January 30, 1918, at the post office at New York, N. Y., under the act of March 3, 1879.



Exclusive features of the Grip Nuts, holding and locking all-in-one, use shorter bolts and save steel. Automatically locks, eliminates the human equation. Costs less and is more dependable. Every piece guaranteed by a responsible manufacturer.

GRIP NUT COMPANY

Peoples Gas Bldg.

Chicago, Illinois



Well May They Call Them "SAFETY CHAINS"

WELL may they call them SAFETY CHAINS, those ACCO CHAINS on passenger equipment cars.

What if a coupler should break? Think of the strain upon those links.

Yes, think of the strain, and thinking remember that **every link in every ACCO CHAIN will hold for the purpose intended.**

Another instance of where passenger safety depends upon the strength of chain. Another example of how the strength of ACCO CHAIN makes it the CHAIN of SAFETY.

Another use of ACCO CHAIN in railway service, that service for which there is an ACCO CHAIN to meet every demand.

Every ACCO Chain Is a SAFETY Chain.

AMERICAN CHAIN CO., Inc.

Bridgeport, Conn., U. S. A.

IN CANADA DOMINION CHAIN CO. LTD. NIAGARA FALLS, ONT.

General Sales Office: New York City

District Sales Offices:

Chicago

Pittsburgh

Boston

Philadelphia

Portland, Ore.

San Francisco

LARGEST MANUFACTURERS OF RAILWAY CHAINS IN THE WORLD

EDITORIAL

Railway Age

The Table of Contents Will Be Found on Page 5 of the Advertising Section

The salary of an Interstate Commerce Commissioner is now fixed at \$10,000 a year. Under the proposed legislation it

The Salaries of Interstate Commissioners

will be increased to \$12,000. This increase is not sufficient. Under the proposed legislation the members of the Commission will have more difficult duties to perform and more important responsibilities to bear than they have in the past. Furthermore, the cost of living of the members of the Commission has increased as much as that of other people. The ability of the men who will accept commissionerships always will be dependent largely upon the salaries paid. The commissioners ought to be paid, not \$10,000 or \$12,000 a year, but \$25,000. Probably it would be impracticable to get Congress to provide for salaries of this amount, but surely it ought not to be impracticable to get Congress to provide for the payment of \$15,000 a year, which is the amount now received by members of the New York Public Service Commissions. Under the proposed legislation there will be 11 commissioners. Therefore, it would make a difference of only \$33,000 a year to the taxpayers of the United States whether each commissioner was paid \$12,000 or \$15,000. The public ought not to be stingy with men performing the very difficult duties and carrying the heavy responsibilities of members of the Interstate Commerce Commission. To pay them under existing conditions any salary less than \$15,000 would be penurious and almost disgraceful.

A railroad executive of long experience recently stated that he had great faith in the final good judgment and common sense of the American railway workers.

Labor and Financial Strength of Railroads

There has, however, been entirely too much of careless and extravagant expressions on the part of some of the labor leaders. Those leaders can profit greatly if they "will keep their ears close to the ground" and listen to the expressions of the more thoughtful of the men who make up their organizations. To say the least, nothing good has been accomplished by the radical expressions of the leaders and probably great harm has been done to both the railroads and the men themselves. The Brotherhood of Locomotive Engineers was for many years looked upon as a conservative organization; because of this its demands were very carefully listened to and quite generally acceded to. Unfortunately, however, for the brotherhood, it has departed from its earlier standards, or rather its leaders have. The following paragraph is quoted from the January number of the official journal of that organization: "It might seem odd for railroad employees to oppose rate raising, on the reasoning that what is good for the railroad should be good for the employees, but it works the other way; for the more successful the railroad, the more powerful an opponent has organized labor to contend against, as these corporations recognize no right lacking the punch to force its recognition." Fortunately there is little question but what the members of the labor organizations generally disapprove of this sort of thing and realize that it is actually hurting their cause. If our country is to pass successfully through the present crisis, a determined effort must be made by the railway and industrial managements and the labor organiza-

tions to try to get together on a good sound basis. There is great need for broad-minded and sane thinking on the part of all concerned. Moreover, not only the railroad employees, but the public generally, will suffer if immediate action is not taken to improve the financial condition of the railroad properties in order that investors may be encouraged to buy railroad securities.

There are well authenticated reports that the Pennsylvania Railroad Company is considering the adoption of a plan for the decentralization of the management and operation of its property. The general scheme which is understood to be under consideration is briefly outlined in a short article which is published in our News section. The main features would be the division of the property into several districts and the placing in charge of the immediate management of each district of an executive vice-president, who, subject to the general policies adopted by the directors, the president and the administrative vice-presidents at Philadelphia, would exercise practically all the authority that ordinarily is exercised by the president of a railroad. This would make it practicable for local conditions, affecting both employees and the public, to be dealt with more promptly, efficiently and satisfactorily than they ordinarily can be on a highly centralized system. It is understood that somewhat similar plans are being considered by the managements of other large systems. There was an excessive tendency toward centralization of management under private operation before government operation was adopted. This tendency has been carried to an unprecedented extreme under government control. In point of investment represented and traffic handled, the Pennsylvania is the largest system in the country. The new policies which its management apparently is about to initiate will be as interesting as they will be significant. The results gained will be closely studied and should be valuable to the company, the employees and the public.

Proposed Changes in Pennsylvania's Organization

A railroad officer of extensive experience on several large railroads in different sections of the country is responsible for the statement that "railroad officers live too much in the past." What he intended to convey was that railroad officers, by comparing the records of their own road, division, terminal or other unit with the records for that unit in previous years, are continually looking backward; in his opinion they are contented if they surpass the record of their own unit for the previous year, when they should rather be comparing their results with the very best records made by other roads. It must be admitted that conditions vary so greatly on the different roads, or even on different parts of the same road, that it is often impossible to draw useful conclusions from comparative statistical data; this was particularly true before the Railroad Administration adopted standard operating statistics. On the other hand, we are too prone to assume that because of this difficulty the operating officer is justified in dismissing the whole matter from his mind with a clear con-

Do You Live in the Past?

unit with the records for that unit in previous years, are continually looking backward; in his opinion they are contented if they surpass the record of their own unit for the previous year, when they should rather be comparing their results with the very best records made by other roads. It must be admitted that conditions vary so greatly on the different roads, or even on different parts of the same road, that it is often impossible to draw useful conclusions from comparative statistical data; this was particularly true before the Railroad Administration adopted standard operating statistics. On the other hand, we are too prone to assume that because of this difficulty the operating officer is justified in dismissing the whole matter from his mind with a clear con-

science. There is no excuse for not examining and studying continually the methods and practices followed by others, no matter how different the conditions may be, nor for failing to experiment with those that seem to promise results. Then, too, it is not impossible in most cases to locate another road or another point at which conditions are quite similar to your own and to make comparisons with such points. The railroads of this country are about to enter a new era, and while it is well enough to compare all kinds of records with those made in the past, the whole situation has so changed that every one has a pressing duty to keep constantly looking forward, carefully studying every step that is taken. No railroad officer is exempt from the duty of striving to adopt the very best methods that may be developed by the most progressive men, wherever they may be.

Freight Rates and the Cost of Living

IN ITS ISSUE for January 23 the *Railway Age* published an editorial criticising an argument which had been made by Interstate Commerce Commissioner Woolley against the return of the railways to private operation and the advance in freight rates which this would make necessary. Mr. Woolley based his argument on the premise that any advance in rates which was made would result in an increase in the cost of living *five times* as great as the amount of the advance in rates. The *Railway Age*, in the editorial referred to, contended that there was no foundation in fact for Mr. Woolley's proposition that an advance in rates would cause an increase in the cost of living *five times* as great; and we cited a large number of statistics compiled by the Railroad Administration and the Bureau of Statistics of the Department of Labor showing that the changes in freight rates and in the prices of commodities within the last seven years have differed from each other so widely as to indicate that there is no such relationship between changes in freight rates and in prices as would be shown if every advance in rates actually did cause, or tend to cause, an increase in the cost of living *five times* as great as the advance in rates.

We thought we made clear that we were not discussing the general relationship of railway rates to the cost of living, but merely Mr. Woolley's views upon the subject. It seems, however, that we did not succeed in doing so. Some newspapers have criticised our editorial upon the ground that we contended that an advance in rates would not increase, or even tend to increase, the cost of living. The esteemed *New York Sun*, for example, has declared that our argument was "unsound," because, as it truly says, "You cannot get away from the fact that if the railroads must receive a 20 per cent increase—and they may need more—it will have to be paid by the American people." Mr. Woolley has written a letter to the *Sun* thanking it for having "riddled the fallacious contention of the *Railway Age* * * * that an increase in freight rates is not necessarily reflected in the cost of an article to the consumer."

We should dislike greatly to have anybody think that the editors of this paper are so ignorant of economics or so stupid that they would argue that changes in railway rates, whether upward or downward, do not affect, or at least tend to affect, prices and the cost of living. The comments of both the *Sun* and Mr. Woolley completely misstate the position taken by this paper. Mr. Woolley, if he really read our editorial, knew perfectly well when he wrote his letter to the *Sun* that we had not made the contention that "an increase in freight rates is not necessarily reflected in the cost of an article to the consumer." We always have recognized, and we recognized in the very editorial in question, that, *other things being equal*, advances in rates do increase the cost of living. We said in one place in that editorial, "The fact is that freight rates are so low compared with the value of most com-

modities that *they exert very little influence upon their prices*," thus explicitly recognizing the fact that they do exert some influence. The point we discussed in the editorial in our issue of January 23, however, was not whether an advance in rates would tend to increase the cost of living, but *whether Mr. Woolley was right in arguing that it would increase the cost of living five times the amount of the advance in rates*.

Mr. Woolley's whole argument was based upon a proposition which implied that advances in rates have a peculiar and especially momentous effect upon the cost of living. Now, what are the obvious facts? The most important fact to be considered is that the freight charges paid by every business man or concern—farmer, manufacturer, wholesaler, retailer, mine operator—are simply one item in the expense of conducting his or its business, other items being wages of labor, cost of materials, taxes, and so on. Any change, upward or downward, which occurs in any one of the many items entering into the total cost of conducting any kind of business is pretty sure to affect, sooner or later, the prices the concerns engaged in that line of business charge for their goods; and of course every change in prices affects the cost of living. But does anybody believe that a 20 per cent increase in the wages paid by a particular class of concerns, or in the cost of their materials, will cause an increase *five times* as great in the prices these concerns charge the public? Certainly not. If every increase in any important item in the costs of any class of business concerns resulted in an increase in its prices *five times* as great, a relatively small upward movement of business costs in general would speedily force prices so high that the market would be destroyed. But if it cannot be rationally contended that an increase in any other item of business costs will necessarily have a five times greater effect upon prices and the cost of living, then, how in the name of reason, can it be contended that an advance in freight rates will have an effect *five times* as great as itself? What the *Railway Age* has contended heretofore, and what it contends now, is, not that an advance in rates will not affect the cost of living, but that not a scintilla of valid evidence ever has been, or even can be, cited in support of the proposition that it will cause an increase in the cost of living *five times* as great as the advance in rates. On the other hand, reason suggests, and large amounts of evidence can be cited, indicating that no change in rates ever did produce any such effect.

How much effect, then, would any given advance in rates have upon the cost of living? *Other things being equal*, it probably would have an effect directly in proportion to the amount of the advance in rates. In other words, *other things being equal*, an advance in rates of a half billion or a billion dollars probably would cause an increase in the cost of living of a half billion or a billion dollars. In many cases, especially in the cases of cheap and bulky commodities, the exact increase in rates would be added to the prices; in other cases less would be added, and in other cases more. Whether more or less than the entire advance in rates would be passed along to the consuming public would depend on business conditions existing at the time.

Under the conditions existing just at present probably not all or even most of the advance in rates would in the long run be passed along to consumers. Under government operation the railways in 1919 incurred a deficit of about \$400,000,000, which must be paid from taxes. A reasonable advance in rates would wipe out this deficit; this would reduce the amount of taxes the federal government would have to collect; and this reduction of taxes would tend to reduce the cost of living. Furthermore, an increase in rates sufficient to attract new capital into the railroad business would cause an increase in railroad facilities; this would help to make practicable a larger increase of general production than otherwise would occur; and whatever tends to increase production necessarily tends to reduce the cost of living. It is evident,

therefore, that while an advance in freight rates would, in some ways, tend to cause an increase in the cost of living, it would tend in other, and probably more important ways, to cause a reduction of the cost of living.

And now let us ask in conclusion, just how much effect railway freight charges actually do have upon the cost of living of the American people? When we reduce the statistics to the lowest practicable units we find that the freight service rendered by the railways is equivalent to *hauling one ton of freight eleven miles every day for every man, woman and child in the United States*, and that for rendering this service the railways receive, at present rates, *10 cents*—less than the price of admission to a movie show. If freight rates should be increased an average of 25 per cent the railways would then, on the average, haul one ton of freight eleven miles each day for each man, woman and child for *12½ cents*.

Which would be more likely in the long run to keep down or reduce the cost of living—to keep the daily freight charge per inhabitant at 10 cents, and thereby render it impracticable for the railways to increase the amount of freight they can haul per inhabitant, or to increase the daily freight charge per inhabitant to *12½ cents*, and thereby enable the railways to increase the amount of freight they can haul for each inhabitant?

The Proposed Railroad Legislation

THE MOST IMPORTANT provisions of the proposed railroad legislation which the Senate and House Conference Committee has been considering are those relating to the rule which should be applied in the regulation of rates. These provisions would be more accurately described as relating to the regulation of net operating income, as the real question involved is what return the railway companies should be allowed to earn to enable them to raise enough capital adequately to develop their facilities.

The provisions upon which the conferees have agreed are, as we understand it, in substance as follows: Rates are to be so fixed as to promote the public welfare by enabling the railways to earn a return sufficient to enable them to raise enough capital adequately to develop their facilities. The regulation of interstate rates is to be left entirely in the hands of the Interstate Commerce Commission, which is also to have power to prevent state authorities from making state rates which will unduly burden or discriminate against interstate commerce. The commission is to divide the railways into rate-making districts. During the first six months of private operation the present government guarantees are to remain in effect. The commission is to fix rates, which, for at least 18 months after the termination of the government guarantees, will enable the railways in each rate-making district to earn an average return of at least *5½ per cent* upon the aggregate valuation of their properties. It may in its discretion allow them to earn an additional one-half of one per cent, which must be invested in unproductive improvements and not capitalized. This would result in some railways earning less than *5½ per cent* and some more. Any railway which earned more than 6 per cent would be allowed to retain one-half of the surplus for its own use and be required to pay the other one-half to the government, which would use it to build up a general railroad contingent fund from which loans could be made to railroad companies that desired them, or equipment could be bought and leased to railroad companies. At the expiration of two years the commission itself must determine what percentage of returns the railways should thereafter be allowed to earn and, having done this, must so make the rates as to enable them to earn the return fixed.

Would these provisions, if adopted, re-establish railroad

credit and thereby enable the companies to raise sufficient new capital? Only the test of experience can answer that question. There are numerous important points which the proposed legislation would leave unsettled. Let us venture to make certain assumptions as to the way they would be settled.

First, the method to be used in determining the value of the railroads, both during the next two years and subsequently, is unsettled. The commission is engaged in making a valuation, but it will be a long time before it is finished. The only tangible basis on which to compute the percentage of return earned meantime by an entire group of railways would be their combined book cost of road and equipment. While the book cost of the railways as a whole probably is not widely different from their total value, the book costs of some individual lines are more than their value, while the book costs of other railways are less. It seems fair to assume that, in arriving at the return that entire groups of railways would be allowed to earn until its valuation work was finished the commission would use their combined book cost, but that in deciding what was the value of each individual railroad, and therefore whether it should be allowed to retain all that it earned, the commission would take into consideration all the evidence it might have available as to the value of the road. As its valuation of all the railways advanced toward completion, the commission doubtless would use it more and more as the standard for determining the return which the railways should be allowed to earn. The railway companies need not regard this prospect with much apprehension, as it appears almost certain that the valuations of a large majority of roads will exceed their book costs.

When the time came, in two years or more, for the commission to determine anew the percentage of return which the railways should be allowed to earn, would it probably fix a higher or lower percentage than that fixed in the proposed legislation? It is only fair to the commission to assume that that would depend on the way in which the legislation had worked up to that time upon transportation and financial conditions then and, to some extent, upon the prevailing public sentiment. The most reasonable assumption seems to be that the commission would not reduce the return allowed. Some people regard the provision authorizing the commission within a few years to change the percentage of return as a bad one. The *Railway Age* believes that it gives a desirable flexibility to the law and is, therefore, a good provision.

The proposed legislation undoubtedly will improve the market for the sale of railroad bonds. What the railroads need today, however, is to raise new capital chiefly, not by the sale of bonds, but by the sale of stock. Would the proposed legislation improve the market for railroad stocks? It must be borne in mind that only the stronger companies have been able to any considerable extent for some years to finance by the sale of stocks and that under the proposed legislation the government would take one-half of all in excess of 6 per cent which any railroad earned. This division of surplus earnings would tend to hinder the railway companies subject to it in selling stock. On the other hand, as Judge C. A. Prouty, director of the Division of Valuation of the Commission, recently has forcibly pointed out, the impairment of the credit of the railway companies has been due largely, if not mainly, to years of uncertainty as to their financial future. Judge Prouty goes so far as to contend that the impairment of their credit has been entirely due to this uncertainty and that their net return in the past has been adequate. Very few railway officers or financiers will accept this view, but they will all agree that the uncertainty as to the financial future of the railways has been very largely responsible for the ruin of many of them. As Judge Prouty has pointed out, whether this uncertainty will be removed will depend, not only upon the legislation passed, but upon

the way in which it is administered by the commission. If, however, the commission administers it as Congress evidently intends to, most of the uncertainty will rapidly be eliminated.

Some railway executives and financiers are vigorously advocating the proposed legislation, which is sufficient evidence of their confidence in it. Others, and especially those representing railways which on any reasonable rates would earn more than 6 per cent, are just as vigorously opposing it. It seems to the *Railway Age* that while the legislation would necessarily be an experiment, its adoption would be a long advance toward the solution of the railroad problem. The largest average return on their book cost the railways as a whole ever earned in five consecutive years was in the years 1906 to 1910, inclusive, and amounted to 5.41 per cent. Whether, after deductions from the surplus earnings of the more prosperous roads, the average return under the proposed legislation would be about this amount would depend upon whether the commission permitted the railways to earn the one-half of one per cent which it would be authorized to let them earn for unproductive improvements. The current rate of interest is higher than it was during the five years mentioned, but on the other hand the period from 1906 to 1910 was one of great agitation and uncertainty regarding railroad legislation.

The proposed legislation cannot be called generous or even liberal, but it can truly be said that it would provide a much better system of regulation than that to which the railways have been subjected for the last 14 or 15 years. The attitude of most railway executives was, we think, well expressed by Chairman Cuyler of the Association of Railway Executives, when he said in a statement issued on February 5: "There can be no question that the conferees of the two committees of the House and Senate have had an earnest desire to do justice to the railroads. If the bill be enacted by Congress the railway executives and the owners of the properties will accept the bill in good faith, with the earnest hope that it may be productive of the desired result, namely, the protection of the present credit of the roads and the extension of that credit so that they may provide in the future adequate facilities for the transportation system of the country. * * * If it does not, the railroads will confidently look to Congress for such additional legislation as may be necessary to further protect the companies and the public."

The Latest Strike Threat

ON FEBRUARY 9 President Barker of the Brotherhood of Maintenance of Way Employees and Railway Shop Laborers issued an order calling for a strike on February 17 at 7 a. m. A strike by this, the youngest of the railway brotherhoods, is more or less of an uncertain quantity. Although it claims some 300,000 members, it may lack the cohesion and unity of action necessary for successful action. One element of weakness lies in the fact that its membership includes many track foremen who have long been honored as belonging to the most loyal group of railway employees.

In the absence of severe winter weather, a defection in the ranks of railway men employed in the maintenance of tracks and structures and as laborers around shops and engine terminals obviously will not immediately cause a serious interference with the operation of the trains except as it will obstruct the operation of coaling stations, pumping plants, engine terminals etc., but there is no denying that a general strike by these men for any extended period now will result in a deterioration of the tracks that will cause serious difficulties.

The brotherhood which has made this strike a possibility was brought into being during the period of government control, although it must be recognized that the latent germ was present in the ranks of the railway laborers some time before January 1, 1918. The maintenance of way foremen,

who form an important factor in this organization, have long been among the underpaid in the railway ranks. Officers of the maintenance of way department had also long complained that the rates paid to their laborers were so low as to recruit only the duller and least efficient men on the market. These conditions were, no doubt, responsible for some sporadic attempts at organization among employees of this group in certain sections of the country, notably in the southeast, in New England and in parts of Canada. A few abortive strikes were also on record.

The railroads consistently combated these attempts at organization, and were usually successful, but it must be admitted that they did little or nothing to remove the underlying causes for the unrest. However, there was nothing in the condition at the end of 1917 that could not have been satisfactorily ameliorated by the institution of an intelligent program for the welfare and increased efficiency of this class of employees.

Whether the roads could or would have undertaken such a step can be relegated to the realms of conjecture. All possibility for such action was removed by the creation of the United States Railroad Administration, under which a labor policy was adopted which virtually required the organization of all large groups of employees into closely-knit unions. The machinery set up for the disposal of labor difficulties was centralized at Washington; the employees could meet this body only through centralized representatives. Moreover, groups of employees were more than once admonished to perfect their organizations before they submitted grievances. With this background, the remarkable growth of the Brotherhood of Maintenance of Way Employees and Railway Shop Laborers into a union that claims 300,000 members and with funds at its disposal that made it possible to invest upwards of \$1,000,000 in clothing factories, will be readily appreciated.

The occasion for the strike, according to the officers of the brotherhood, lies in the failure of the Railroad Administration to grant a 40 per cent increase in wages demanded last summer when the several railway brotherhoods raised vehement objections to the continued rise in the cost of living. Director General Hines announced that the good offices of the government would be brought to bear in an effort to obtain a reduction in the cost of living, and requested that the unions withhold their demands until the government could demonstrate its ability to do this. The union now avers that it has waited patiently for this reduction to take place and seeks to hold Mr. Hines to his promise before his authority shall have expired with the end of government control.

Whatever the merits of the case, the strike is unwarranted for two reasons: (1) The brotherhood has no right to wrest from the Railroad Administration, on the eve of its demise, concessions which must be binding on railway stockholders who have no voice in the negotiations; (2) a strike is not the proper way to settle a controversy, since any strike of a large mass of railway employees, like the recent coal strike, threatens the very lifeblood of the nation. The other railway brotherhoods are also parties to this controversy with the Railroad Administration, but for some reason have allowed the youngest member of the family to take the initiative in this case. Whether this is due to a maturity of judgment, which has also caused them to allow the Maintenance of Way Brotherhood to take the first step in the plans for the co-operative manufacture and distribution of necessities, cannot be determined. It is at least an interesting circumstance.

It is an ill wind that blows no good, and perhaps after all a strike of the maintenance brotherhood will serve a very useful purpose in giving the people of this country just the object lesson they need to cause them to demand the restoration in the conference draft of the railroad legislation, the teeth that have been extracted from the anti-strike clause of the Cummins bill.

Bringing the Younger Men into the Large Railway Associations

ONE OF THE MOST marked developments in the national engineering societies during the last three or four years has been an awakening of interest in the younger men of the profession who constitute the potential source of membership of the future. The American Railway Engineering Association is now considering means whereby it may attract the younger engineers in railway service into this organization in large numbers. Since its problem is the same as that facing other similar societies in the railway field, interest in the broad question involved extends far beyond membership in the one society mentioned.

Societies such as the American Railway Engineering Association are organized not for pecuniary profit but for the mutual improvement of the members and for the investigation of problems and the dissemination of interest of value to them in their regular duties. Therefore, the good which an organization can accomplish is increased with the addition of numbers to its ranks.

The benefits of membership in a technical railway association are derived in a number of ways. In the first place, the proceedings of an organization such as the American Railway Engineering Association, the Master Mechanics' Association and the Master Car Builders' Association stand pre-eminent in their respective fields as the courts of last resort regarding information which they cover. Another advantage of membership arises from the opportunity to attend the annual meetings and to participate in the discussions of the subjects under consideration. No one interested in the branch of railway activity covered by such an association can fail to benefit from the discussions of such questions as are brought up on the floor of the convention.

However, with all of their advantages it has been evident that these organizations have not been attracting the younger men to the extent that would appear desirable. A survey will show that relatively few men below the rank of division officers are joining these associations. The reasons for this are not hard to find. The young men are, usually, unable to leave their roads to attend the annual convention at a time when their superior officers are also absent. Also if present they hesitate to participate in the discussion in the presence of their superior officers. Likewise it is difficult for them to leave their work for the time necessary to attend committee meetings held at distant points throughout the year.

In the solution of this problem the large associations can well afford to study a plan which the Railway Signal Association has in effect. This is its sectional committee organization through which local group organizations have been perfected in 18 railway centers in the United States, 2 in Canada and 1 in England. These sections, each with its local organization, hold three or four one-day meetings annually. They are so located that nearly every member of the association is within a night's ride of the headquarters of a local section and is thereby able to attend its meetings with the minimum loss of time. Since these meetings are largely local in character and without verbatim stenographic reports free discussion is promoted, while sufficiently general notes are taken to preserve the conclusions of the members for permanent record. While the preparation of the program is in the hands of the local committees, certain of the subjects are assigned by the executive committee of the parent society so that continuity of work is assured throughout the country.

In this way the Railway Signal Association is bringing the advantages of membership to large numbers of men in the field, many of whom are unable to attend the annual convention. This plan has much to commend it to other associations as a means of making their organizations real, live factors in the promotion of their work among the

largest possible number of employees in their respective departments of railway operation.

The Lesson of E. P. Ripley's Career

E. P. RIPLEY's career teaches as many valuable lessons as can be learned from the life of any railroad man by the present and oncoming generation of railroad managers. He was not, in the ordinary sense, a railroad financier. He made the Santa Fe a very successful property financially, but this was due almost entirely to able administration of the property which was directed in well-balanced proportions to making it a first-class property physically, to developing all the resources of the territory which it traversed and thereby securing the maximum available traffic, and to operating it economically, but always with due consideration of the desirability and even necessity of giving the public good and adequate service.

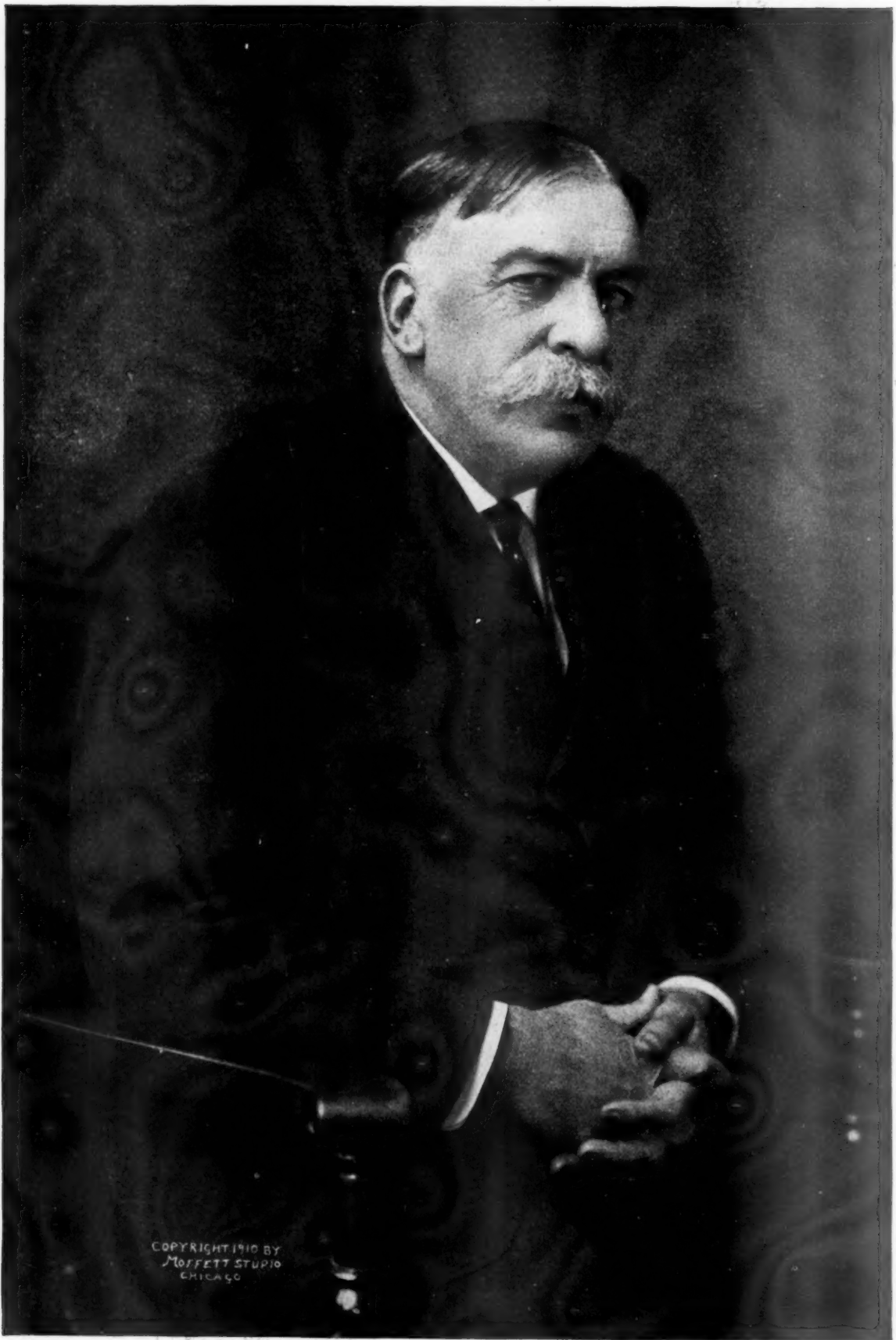
The success of Mr. Ripley's work was due not merely to ability but very largely to character. He was, to use a slang word, as "square" a man as ever lived. He was criticised for many things, but probably the most thorough investigation of his career, if every transaction of his life were considered in the light of all the conditions, would fail to disclose that he ever did a really dishonorable or dishonest thing.

Having done his duty and having caused the Santa Fe to do its duties as he understood them, Mr. Ripley was most pertinaciously insistent that other people should do their duty by him and the railroad. He was a good employer, but when the employees in the Santa Fe shops struck for reasons which he was sure afforded them no justification, he fought their unions to a finish, won, and established the open shop. He did his best to render good service at reasonable rates, but when the state and national governments attempted to subject the railways to regulation which he regarded as unfair and harmful, he fought them in the arena of public opinion with all his strength and with every legitimate weapon available. He spoke his mind in addresses, letters, interviews and magazine articles, and also established a publicity organization which was one of the best in the country. When public discussion did not produce the desired results he resorted to the courts, although he did not like litigation.

He took up the cudgels as promptly with financial interests whose influence he believed was being used to hurt the Santa Fe as with the regulating authorities. When the Harriman interests acquired a large amount of stock in the Santa Fe, E. H. Harriman, as was his wont, began to try to dictate the policy of the Atchison. Mr. Harriman was a very great man, and few men ever successfully opposed him, but Mr. Ripley calmly informed him that if he continued to press his views Mr. Ripley would join with him in asking the stockholders for their proxies and see which would get the larger number of them. Mr. Harriman wisely refrained from accepting the challenge and Mr. Ripley continued to manage the Santa Fe in his own way.

The highest integrity and ability in the management of his railroad, the rendition of the best service practicable to the public, and then unflinching courage in fighting everybody who attempted to treat unfairly the railroad company and its stockholders—these were the principal qualities which made Mr. Ripley one of the most successful railroad men that America has produced.

His career should be an inspiration to every ambitious young man in the business. He rose from the bottom to the top without "pull" or any special favoring condition, and he died in the fullness of years and of reputation. Let us hope that no system of railroad ownership or management ever will be adopted which will make it more difficult, or even impossible, for men to have similar careers in the railroad business in future.



Edward Payson Ripley

E. P. Ripley's Death Ends Great Railroad Career

Head of Santa Fe Was Man of Extraordinary Character and Personality as Well as Administrator of Rare Ability

AS ANNOUNCED IN LAST WEEK'S issue of the *Railway Age*, Edward Payson Ripley, chairman of the board of directors of the Atchison, Topeka & Santa Fe Railway Company, died at his winter home in Santa Barbara, Cal., the night of February 4.

Mr. Ripley's death took from the railroad business of the United States one of the most remarkable men who have ever participated in its affairs. Probably it is no exaggeration to say that when he passed away he was the leading railroad man of the United States. It was not merely his ability, which was very great, and his character, which was rugged and dominating, but also his long experience as the head of a great railroad system and his unsurpassed ability to co-operate with other railway executives in all important matters, that had raised him to a position of such preeminence. The average period during which men serve as heads of great railroads is short. Mr. Ripley, on the other hand, had been the head of the Santa Fe System for twenty-four years. Several generations of railroad presidents have come and gone during this period.

Despite his age and his long tenure of service he had kept himself young and forward looking. The consequence was that as time had gone on his views regarding what policies the railways as a whole should follow or advocate were more and more eagerly sought, and never had the opinions expressed by him carried so much weight with his associates in the railroad business as they did toward the end of his career. It happens in the cases of many great men that they reach the height of their reputations in middle life and that afterward their reputations and influence decline. Mr. Ripley's reputation and influence grew more during the last ten years of his life than during any preceding period.

While he had been sick a good deal recently his death came unexpectedly, and was a shock to his family and friends. In the late summer of 1919, when the weather was very hot, he attended a meeting of the Association of Railway Executives in New York. He seemed to be feeling well, and while returning from New York on the train made an engagement to play golf the next week. But by the time he arrived in Chicago, he was tired out, which was attributed to his suffering from the heat during the trip. On arriving at Chicago he went to his home at Riverside and became seriously ill. He was taken to a hospital where, after he had been given opportunity partially to recover his strength, two operations were performed. They were very painful but successful. Late in the year he went to his winter home in California. He seemed to be getting stronger all the time, and three days before he died wrote to one of his friends in the east that he hoped and expected soon to be able to play golf again.

No brief article could do even partial justice to the life and work of E. P. Ripley. He was not only a successful railroad developer and administrator, but a man of extraordinary character and personality. No better proof of his ability could be afforded than the history of the Santa Fe under his management. When the panic came in 1893 it was operating 7,480 miles. When Mr. Ripley became president on January 1, 1896, it was just emerging from receivership, and had been reduced to 6,430 miles. It had 962 locomotives, 641 passenger cars and 27,719 freight cars. Its annual report for the year ended December 31, 1918, showed that at that time, it had an operated mileage of 11,456 miles, 2,122 locomotives, 1,667 passenger train cars and 70,458 freight train cars.

These statistics, however, give a very inadequate idea of the extent of the property's development under Mr. Ripley's administration. It had been extended to San Francisco on the west and to Chicago on the east, and from a road which was an unballasted streak of rust it had been transformed to one in fine physical condition. In 1896 the book cost of the property was about \$372,000,000 and it had outstanding a capitalization of about \$396,000,000. At the end of 1918 its investment in road and equipment was \$631,500,000, investment in physical property, franchises, etc. of all kinds was over \$710,000,000, and its outstanding capitalization was about \$633,000,000. In 1896 its passenger mileage was about 283,000,000 and its ton mileage about 1,749,000,000, its total earnings being \$30,000,000, its operating expenses \$22,000,000 and its net earnings about \$8,000,000. In 1918 the ton miles handled by the system amounted to about 14,200,000,000 and the passenger miles to about 1,700,000,000, its total earnings being about \$188,000,000, its operating expenses about \$136,000,000 and its net earnings about \$52,000,000. The common stock was put on a dividend basis in 1901 and since 1907, excepting in 1909, has regularly paid 6 per cent; and there has been accumulated a surplus of about \$42,000,000, practically all of which is invested in the property.

Mr. Ripley was one of the railroad president who were not appointed federal managers of their properties when the corporations were separated from the properties in May, 1918. He remained as president of the corporation on his own initiative, however. Immediately after the government's policy of appointing federal managers was announced he wrote a personal letter to Director General McAdoo, saying that he hoped government operation would be successful, but that in view of his age he could not consider accepting a federal managership, and indicating that he would prefer that it should not be offered to him. Mr. McAdoo in reply wrote him a very cordial letter.

Mr. Ripley's outstanding characteristics as a railroad manager were sound judgment, broad knowledge, rare skill in selecting and developing men, and unlimited courage.

When he became the head of the Atchison it had control of the St. Louis & San Francisco. The Frisco was released, mainly, no doubt, because it was felt that it was not a natural part of the system and that it would be possible to develop the property, traffic and earnings of the Santa Fe better without it. The Santa Fe itself also had a number of unprofitable lines. Mr. Ripley never believed in continuing to own and operate lines merely for competitive purposes, and he got rid of many lines of this sort. He never hesitated to do a thing that was sound and right merely because he might be criticised for it. He himself a few years ago related to the writer the following incident which illustrated this characteristic:

The Santa Fe had built a line, then called the Wichita & Western, running from Wichita, Kan., to Bucklin. From Pratt, Kan., to Bucklin, a distance of approximately 100 miles, this branch line closely paralleled the main line of the Rock Island. The Rock Island naturally had an advantage in soliciting and handling traffic in this territory.

"I decided to tear up our line from Pratt to Bucklin," said Mr. Ripley. "The lawyers said that I couldn't do it, but I did it anyway. I gave the stations to the farmers for schoolhouses and that placated them and we never had any trouble about it." Mr. Ripley paused and the almost im-

perceptible smile which was characteristic of him played over his features as he added, "There was one fact about that transaction that has never been published. Cable (the president of the Rock Island) gave the Santa Fe \$500,000 for tearing up that line." That was in the days before the anti-trust law was strictly enforced.

There were numerous other cases where, in order to avoid building or operating unprofitable lines, Mr. Ripley united with the executives of other railways in arranging to operate tracks jointly or even in building lines jointly. For instance, the Santa Fe and the Southern Pacific jointly built the Northwestern Pacific.

Mr. Ripley bore the reputation of being one of the most combative men in the railroad business. He always spoke out what he thought about everything and there were many who criticised him upon the ground that in this way he did himself and the railroads harm. As the years went by, however, and the views that he expressed and the predictions he made regarding government regulation and other matters were vindicated his blunt outspokenness caused his reputation and influence with his associates in the railroad business and with the public to grow greater.

While he was a severe critic of government regulation, it is not so generally known that he was among the railway executives who were most willing to accept any kind of increased regulation which he regarded as reasonable. Some years ago he related to the writer an incident which preceded the enactment of the Hepburn law, which, we believe, has never been published. In 1905 President Roosevelt began an agitation to secure the enactment of legislation which would give the Interstate Commerce Commission authority, when it found a rate unreasonable, to prescribe and put into effect a rate which it regarded as reasonable. He invited Mr. Ripley to lunch at the White House, laid his plan before him, and said in substance, "If the railway people will agree to accept legislation containing this provision I will let them write the bill themselves. It must, however, be written in such a manner as to give the Interstate Commerce Commission the authority I have indicated. That is all I want, and that I must have."

Mr. Ripley agreed with the President that his proposition was reasonable and said he would present it to the railroad presidents. He gave a dinner which 22 railroad presidents attended. He presented President Roosevelt's proposition and urged the railroad executives to accept it. Nineteen presidents voted against accepting it and only three in favor of it, two of these three being Mr. Ripley and A. J. Cassatt, then president of the Pennsylvania Railroad Company.

"I had to go with my friends," said Mr. Ripley, "so we told President Roosevelt that we couldn't accept his proposition. He immediately started a gigantic campaign to get the legislation he wanted. He whipped us and the passage of the Hepburn act was the result. I have always felt that if we had accepted President Roosevelt's proposition at that time the railroads would have been spared a great deal of trouble. The agitation carried on to secure the passage of the Hepburn act largely created the hostile public opinion which was responsible for much of the state and national legislation subsequently enacted."

It has been reported that Mr. Ripley was elected president of the Santa Fe as a result of a compromise, the members of the board being deadlocked between two other men. Commenting upon this report, Mr. Ripley once stated the facts to the writer as he then understood them. The story reflects great credit upon Mr. Ripley and also upon another great American business man who long since passed away, P. D. Armour.

Mr. Ripley left the general managementship of the Burlington to become vice-president in charge of traffic of the Chicago, Milwaukee & St. Paul in August, 1890. At that time secret

rebating was rife on American railways. The Armour interests then, as now, owned a large interest in the St. Paul, and the elder P. D. Armour was a director of the St. Paul company. Mr. Ripley soon found that the St. Paul was practicing unfair discrimination on a large scale in favor of Armour & Co. He protested against this to Roswell Miller, who was then president of the St. Paul. Mr. Miller pointed out to him that the St. Paul was merely doing what other railways were. Mr. Ripley insisted, however, that if he was to remain vice-president of the road Mr. Miller must take the matter up with Mr. Armour. Mr. Miller did so, but Mr. Armour was immovable. A conference between Mr. Armour and Mr. Ripley himself finally was arranged. There was some very animated conversation, but Mr. Ripley stood to his guns. He pointed out to Mr. Armour that continuance of the practices he complained of would result in a scandal which would injure the St. Paul, the Armour interests and Mr. Ripley himself, and declared that he did not intend to have his reputation smirched. Mr. Armour found that he had encountered a man who had a will quite as strong as his own, and finally yielded.

Sometime afterward Mr. Ripley was out on the line in his car one of the members of his party awakened him in his drawing room and told him the newspapers had announced that he had been selected for president of the Santa Fe. Mr. Ripley said this could not be because he had not been consulted. He was on his way back to Chicago, however, and when he arrived there he found the report was true. When he made inquiry as to how he had happened to be selected he learned that among those whom the directors of the Santa Fe had consulted regarding the best man for its presidency was P. D. Armour. Mr. Armour had told them that the man who by reason of his courage and ability should be their choice was E. P. Ripley; and it was largely through Mr. Armour's influence that Mr. Ripley was elected.

Mr. Ripley's great success as a railway administrator probably was due as much to his judgment of men and to his willingness to give authority to those whom he trusted as to any other of his characteristics. Among the leading railway men who were developed on the Santa Fe while he was president were W. B. Storey, who succeeded him as president; Walker D. Hines, now director general of railroads; H. U. Mudge and J. E. Gorman, both subsequently president of the Rock Island; W. C. Nixon and W. B. Biddle, both subsequently president of the Frisco, and several others who might be mentioned.

His way of working was interesting. The first principle with him seemed to be to master all the information available pertaining to the railroad business, and especially to the business of the Santa Fe. Having possessed himself of this knowledge he was equipped to pass upon almost any question of policy which was presented to him, and he passed upon them with an ease and promptness which would have been inexplicable to anybody who did not know the vast amount of information which he always had available.

Outwardly he seemed gruff and short, but those who frequently came in contact with him learned that he was the gentlest and kindest-hearted of men. He gave the heads of departments of the system almost unlimited authority, but he always knew everything that was being done and could be as severe in his criticisms as he could be cordial in his commendations. He made all his decisions so quickly that while he was one of the most successful railroad administrators who ever lived, he never seemed to be very busy and it was always possible for anybody who had any business to transact with him to get access to him at almost any time.

He never seemed to be driving himself hard and he had numerous ways of getting recreation. He was an omnivorous reader of books and magazines of all kinds, and probably no other railway executive ever read so many newspaper

clippings as he did. He was very fond of golf, and played a good game. When he was at his winter home in Santa Barbara he played golf almost every day and during the summer when he was in Chicago he always found time to play frequently. He loved cards and played a very good hand at whist.

He could be very curt when things went wrong owing to causes that could have been avoided, but he was a marvel of patience regarding unfortunate occurrences which could not be helped. The writer once traveled from New York to Chicago with him on his private car. The train to which it was attached in New York was scheduled to arrive in Chicago at 5 p. m. the next day. Not long after leaving New York, however, a hot box developed on Mr. Ripley's car. Repeated efforts were made to remedy it, but they were unsuccessful and the car was finally cut off the train. After hours of work on the hot box the car was put on another train, but the hot box soon developed again, and again the car was put off, this time at Marion, Ohio. It was later put on another train, and a car repair man rode the train from Marion to Chicago working on the hot box every time the train stopped.

The experience was enough to have tried the patience of Job; but it never fazed Mr. Ripley. Almost every time the train stopped he got out and calmly watched the car repair men work on the hot box, after which he would get back in his car and resume playing cards. Instead of arriving at Chicago at 5 p. m., he arrived there at 5 a. m. the next day, but throughout the entire experience he never manifested the slightest impatience.

In his manner and in his mode of living he was one of the simplest of men. In fact, he was as totally devoid of everything savoring of ostentation as a man could be. As he grew older he manifested an increasing fondness for the company of young men, and this probably was one of the principal reasons why he remained young in heart to the end.

Mr. Ripley's married life was an extremely happy one. On his seventieth birthday in 1915 a dinner was given to him in Chicago by the officers and directors of the Santa Fe, which was attended by important railway men and business men from all over the country. The one feature of the dinner which will live longest in the memory of those who attended it was the toast to his wife, who was in the gallery, which Mr. Ripley offered immediately after he began to speak. He said:

"Before proceeding I desire here to pay tribute of praise to her who forty-four years ago joined her fortunes to mine and who ever since has provided the comforts and rest of a quiet home; and twice has accompanied me through the valley of the shadow of death; who has watched over me mentally, morally and physically, and who is mainly responsible for such success as I have had in conserving mind and body. I ask you, friends, to join in drinking the health of my wife."

While Mr. Ripley's career was an extremely complete and well-rounded one, and while on his retirement to the chairmanship of the Santa Fe on Mr. Storey's election as president late in 1919 he had decided to do no more hard work, his death, in view of the conditions existing in the railroad industry at the present time, may very truly be said to be "untimely." His sound and courageous counsel would have been invaluable to his associates in the railway business in dealing with the many difficult problems which will be presented after the railways are returned to private control on March 1.

Mr. Ripley was born at Dorchester, Mass., on October 30, 1845. He began railway work in 1868 as contracting agent for the Star Union Line at Boston, Mass. From October, 1870 to 1872, he was clerk to the general eastern agent of the Chicago, Burlington & Quincy, and from the latter date to 1875, he was New England agent. He then became gen-

eral eastern agent, and on June 15, 1878, he was made general freight agent. He held the latter position until 1887, when he was appointed traffic manager, and the following year he was promoted to general manager of the Burlington. In August, 1890, he was chosen third vice-president of the Chicago, Milwaukee & St. Paul, which position he held until he became president of the Santa Fe on January 1, 1896.

Hines Urges Continuation of Terminal Committees

CONTINUATION after the expiration of federal control of the special terminal committees created by the Railroad Administration was urged by Director General Hines in a letter to R. H. Aishton, president of the American Railroad Association.

"I am writing this letter to suggest the desirability of continuing after the expiration of federal control the special terminal committees which have been appointed and are operating in seventy-three of the principal railroad terminals in the country," he said.

"For some time I have been of the opinion that in the railroad terminals lies the greatest possibility for making constructive improvements in the transportation service. These special terminal committees were accordingly appointed for the purpose of doing everything in their power to speed up and improve the transportation service within the terminals. Among other matters to which those committees have given and are giving particular attention are the following:

1. Lack of switching power.
2. Delays in interchange of equipment.
3. Delays in prompt placement of cars for unloading and pulling out of loaded cars.
4. Delays in loading and unloading equipment.
5. Delays in the movement of cars awaiting billing.
6. Bad order cars.
7. Heavier loading.

"A number of these committees are also engaged in making and maintaining accurate yard checks showing the time consumed in the movement of freight through the terminals and indicating the respects in which improvements in the service can be made.

"Each of these committees consists of a number of operating officials and also one representative of the shippers, having equal standing with the other members of the committee and nominated by commercial organizations.

"Most of these committees have done very good work, and I consider it highly desirable, from the point of view of continued and improved efficiency of operation in the terminals, that they should be continued after the end of federal control and that the representation of the shippers thereon should be continued.

"While I appreciate the difficulties of getting joint action of this character under private management, I think that advantage both to the public and the railroads is such as to make it desirable for you to consider calling this matter to the attention of the advisory members of the executive committee of the American Railway Association and in that way to the attention of the railway executives."

E. L. Dalton, traffic manager of Montgomery Ward & Company, Chicago, has been promoted to general traffic manager. J. D. Collier, assistant traffic manager, has been promoted to traffic manager, succeeding Mr. Dalton, and R. M. Vowels, chief clerk in the traffic manager's office, has been promoted to assistant traffic manager, succeeding Mr. Collier.

Car Shortage

THE SUBJECT OF CAR SHORTAGE was given a general airing in the Senate on February 11 in connection with a resolution introduced by Senator Gronna of North Dakota to instruct the Committee on Agriculture to investigate "the alleged lack of supply and failure to supply an adequate number of stock cars and cars for transporting grain and other farm products during the period of federal operation of the railroads, and the charges of wilful interference by certain officials of the Railroad Administration with the successful operation of the railroads by the government." The discussion, which resulted in no conclusion, centered largely around the question as to whether the investigation should not be made by the Committee on Interstate Commerce. Senator King insisted that it be amended for this purpose. Senator Cummins, chairman of the committee on interstate commerce, objected to this, saying:

"There is a car shortage in the United States, a very serious shortage. This shortage has been long known for it is of long standing. The interstate commerce committee has investigated the subject very many times. In fact, it has been in continuous investigation of the subject for more than two years and it knows all there is to be known in regard to the matter. When the railways passed into the hands of the government there was inadequate car equipment and at short intervals during the years before there was a car shortage. It is pretty well known that in order to maintain the car equipment it was necessary to supply 100,000 cars each year. Even that condition would not provide for the growing commerce of the country. During the two years of federal control, for reasons which I need not particularize, the government has not furnished the 100,000 cars each year and naturally and inevitably we are now suffering from even a greater car shortage than we were when the government took possession. These are facts which are perfectly well known and nothing can be accomplished by referring the resolution to the committee on interstate commerce."

Senator Overman referred to the charges of wilful interference and asked whether they had ever been investigated.

"That subject, too," said Senator Cummins, "has been now and then exploited before the Interstate Commerce Committee, but I do not think that that is true. There may have been an employee here and there, a few employees, who have desired to discredit government operation by infidelity and inefficiency, but I do not think that any such practice has been general or prevalent enough to be really worth while investigating. I am not speaking against the passage of the resolution. All I say is that it would simply involve further labor without any results. I know there is a car shortage and the committee knows about what the car shortage is and we are doing everything in our power in the construction of a new railroad bill to put the railways of the country in a position so that they may supply themselves with the cars that are absolutely necessary in order properly to do the business of the country. The railways are about to be returned to their owners and I am infinitely more interested in the preparation and passage of a bill that will enable their owners to operate them successfully than I am in investigating a charge that during the last two years there has been some inefficiency or some intentional effort on the part of employees to discredit government operation."

Senator Sterling suggested an amendment to the resolution, which was agreed to, that it be broadened to include wilful neglect of officials or employees, as well as wilful interference.

Senator Kellogg presented a table showing that from 1913 to 1917 the railroads had acquired an average of 120,000 new freight cars a year and had retired an average of 91,000 each year, making a net addition of 29,700, and that for two

years and two months the government has purchased only 100,000 cars, although the traffic has increased 50 per cent since 1915. He said he did not think the Railroad Administration or the officers working under it for the government have wilfully failed to perform their duty, but that "the great central, cumbersome organization in Washington, trying to operate 260,000 miles of railroad, is impossible and inefficient and could not be otherwise, with all due respect to the ability and integrity of the men who are trying to perform the task."

Senator McKellar offered an addition to the resolution, which was agreed to, to make the investigation cover the recent order of the director general "restricting empty cars to the grain districts, the reasons therefor, the interference with normal business caused thereby in other districts where cars are now."

Railroad Administration Creates Division of Liquidation Claims

DIRECTOR GENERAL HINES on February 5 announced that T. C. Powell, having resigned as director of the Division of Capital Expenditures of the Railroad Administration, effective February 15, because of his election as vice-president of the Erie, the Division of Capital Expenditures would be discontinued on that date. Mr. Powell was also chairman of the claims committee of the Railroad Administration. In view of the necessity for making continuous provision for the settlement of questions arising out of federal control, the Division of Liquidation Claims is created, effective on February 15, with Max Thelen, now director of the Division of Public Service, as director, in addition to his present duties. The new division will have jurisdiction over capital expenditures and claims relating thereto, and also claims relating to maintenance, and will include the necessary technical force.

E. E. Adams, engineering assistant to the director of the Division of Capital Expenditures, resigned on January 1 to return to his former position as consulting engineer of the Union Pacific at New York.

The law, accounting and finance divisions of the Railroad Administration as well as the new division will have plenty of work to do long after the relinquishment by the government of the operation of the railroads, but the other divisions will begin on that date to disband. None of them, however, will be able to quit at once and it is probable that various sections will wind up their work at different times.

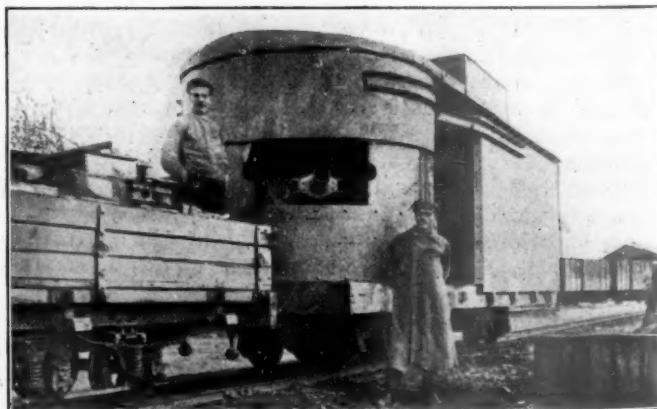


Photo from Underwood & Underwood, N. Y.
An Estonian Armored Train

Success or Failure of Railroads Depends Upon I. C. C.

Government Holds Carriers in Hollow of Its Hand, Says Director Prouty in Discussion of Railroad Valuation

WASHINGTON, D. C.

WHETHER THE PRIVATE MANAGEMENT of the railroads which is to be resumed on March 1 shall succeed or fail, must depend largely upon the Interstate Commerce Commission, says C. A. Prouty, director of the commission's Bureau of Valuation, in a memorandum filed with the commission upon the question of final value, which was discussed in oral arguments before the commission on January 7. The government, he says holds the carriers in the hollow of its hand through its power to dictate rates and the difficulty as to railroad credit has been caused not by insufficient earnings but uncertainty as to the policy of the government. These points are made by the director for the purpose of emphasizing the importance of the valuation now being made by the Interstate Commerce Commission and he declares that to remove the uncertainty that has heretofore existed the commission must determine the value of each property and the government, either Congress or the commission, must declare the return which is to be permitted upon that value. His remarks are especially pertinent in view of the fact that the conferees on the railroad bill have agreed upon a bill which provides a percentage of return to be fixed for a time by the law and thereafter by the commission upon the value of railroad property. Director Prouty also contends that the value for rate-making purposes rests largely in the judgment of the tribunal called upon to determine it.

An abstract of the director's memorandum, in which he discusses the question of final value from a practical standpoint without any attempt to cite or apply the numerous legal decisions, follows:

I.

The importance of a valuation of the railroad properties of this country has long been apparent to students of that problem; it has now become obvious to all, even the unthinking. On March 1 next private ownership enters upon its final test. If it succeeds it will become the permanent policy of this country. If it fails in the estimation of the public, government operation must result. Whether it succeeds or fails must depend largely upon this commission.

The question is one of revenue—how to give the carriers the necessary money and credit without unduly taxing the public. The carrier must have sufficient with which to pay its expenses and a fair return upon its property and it must have in addition sufficient credit to provide for the development of its facilities. If it can not obtain the necessary money for this latter purpose, or if it must obtain that money at an extravagant figure, the public of necessity suffers.

It is often charged that the decline in railroad credit has been due to insufficient earnings, but this statement is not warranted. The earnings of the so-called test period—that is, the three years ending June 30, 1917, were sufficient, but railroad credit steadily declined. The trouble has been the uncertainty. The public has come to realize that the government holds these carriers through its power to dictate their rates in the hollow of its hand, and the doubt as to what the policy of the government is to be has been the disturbing factor. To remove that uncertainty the commission must determine the value of the operative property of each common carrier and adopt a method of keeping that valuation good from year to year. The government, either Congress or the commission, must declare the return which is to be permitted upon that value. The beginning of a solution of this railway problem is the statement of such a value.

Our field work in the engineering section has been sub-

stantially completed. Our field work in the land and accounting sections will by the end of this year be well advanced toward completion. Within the next two years it is hoped that reports will be filed from all sections upon most railway systems of significance. It is desirable that the commission should proceed as speedily as it properly can with the naming of a final value.

II.

In a memorandum filed with the commission upon the first valuation hearing I stated that this value to be fixed by the commission was not the exchange or condemnation value, so called, but was rather that sum upon which, giving due consideration to all relevant facts, a fair return ought to be allowed. Nothing which has transpired in all the elaborate discussions then and since has in anywise tended to alter that opinion. Attention should, however, be called in this connection to the fact that the thing valued in the two cases is not the same and that this alone might account for the different method applied in the ascertainment of that value and the different result attained. In a condemnation proceeding everything connected with the property is taken—the franchise, the physical property, the business which has been created; while in this proceeding you are seeking a value for only that property which the carrier has devoted to the public use. Neither the franchise nor the business of the carrier is involved.

III.

In a paper prepared for the public utilities section of the American Bar Association I attempted to review the decisions of the Supreme Court touching this question of rate-making value and reached the conclusion that such a value could not be controlled by the application of any inflexible rule but rested largely in the judgment of the tribunal which was called upon to determine it. The commission is accumulating certain facts, like cost of reproduction, original cost, etc. From these facts a value must be deduced and stated. Now, there is no hard and fast rule by which the commission can apply these facts; no "formula," in the language of the Supreme Court, which can be used for the working out of such value. The commission must intelligently view these facts and from such consideration deduce a value, and unless it is apparent that the commission in so doing has proceeded upon some clearly erroneous principle, the value so deduced will not be disturbed by the Supreme Court.

This does not mean, however, that the commission in its statement of value can proceed without method. It must have some plan or theory and must apply to every case that same plan or theory. It can not say: "We think that Road AB, upon consideration of all the facts, is worth \$100,000,000; that Road XY, upon consideration of the same facts, or substantially the same facts, is worth \$150,000,000." No such valuation, even if it were accepted by the court, would commend itself to the public or sustain the test of actual experience. The commission must have some theory which can be applied to all cases and it must have a theory or plan which is not only capable of stating a value today but which will permit of the correction of that value as the property is increased or diminished for the future.

I desire to state my opinion of the way in which this should be accomplished, and in doing so it should be clearly understood that I am speaking for myself alone. This is a subject which has been necessarily very much discussed by those con-

nected with the Bureau of Valuation, and I believe that as to most which I shall propose we are in substantial accord; but the subject is one of tremendous importance; the decision of the commission is likely to be accepted as final; opinions widely differ as to what under all the circumstances should be done; and I do not, therefore, desire at this time to endow what I am to say with any artificial consideration that it expresses the view of the Bureau of Valuation.

IV.

In the making of this valuation, the commission acts under certain limitations, the most important of which is that it must accept and apply the decisions of the Supreme Court. While this question in its broader aspects is political and economical, it may always become in its final analysis judicial since the carrier by alleging that the value which you fix is confiscatory under the Constitution of the United States may always bring that value to the bar of the federal court of last resort. You must, therefore, in so far as this court has laid down a principle applicable to the stating of this value, observe that principle. Looking, then, first of all, to the decisions of the United States Supreme Court, how far can you proceed upon the strength of such decisions?

The thing which stands out most prominently in the reading of those opinions, and which is reiterated again and again and never departed from, is that you are to value the *property* which is at the time of the valuation being devoted by the carrier to the public use. That property may be endowed with certain elements of value, and its rate-making value may perhaps be added to or subtracted from by various considerations, but the thing with which you deal is always the property which is being devoted to the public service. It is not the franchise, for the carrier has not devoted its franchise to the use of the public. That is a contribution by the public for the purpose of permitting the carrier to devote its property to the public use.

You are not valuing the business, nor the strategic position, nor the operating advantages of the carrier, for none of those are property devoted to the public service. They are all retained by the carrier which continues to enjoy, under the rate to be fixed, the full benefit of these advantages.

Go back to the very beginning, before this carrier has begun to render a public service, and what is the property which at the inception of that service it devotes to the public use. Manifestly, it is its physical property and that is all the property which it ever devotes to that use, although, as suggested, this property may possess different elements of value at different times.

The decisions of the same court make it equally plain that the commission is to determine the value of that property as of the date of its valuation, *i. e.*, in its depreciated state. That has been clearly assumed by the court in all the cases before it and was expressly so ruled in the Knoxville Water case and the Minnesota rate cases. This being so, the commission will generally begin its inquiry by taking the figure which is shown in our inventory as cost of reproduction new less depreciation.

This may not invariably be so. It may sometimes happen that the original cost of the property, if the construction be recent and the facts clearly ascertainable, may be more satisfactory than the estimate of reproduction furnished by our engineers; but ordinarily that figure is not obtainable and the commission will therefore begin as above.

This figure does not, however, represent the value of the property. Since that property was new certain changes have taken place. Most of the property has depreciated and is for that reason of less value, but certain of it has appreciated and is of greater value. It is universally admitted that an old and seasoned roadbed is worth more for the transaction of business than a new one.

Now, the Supreme Court has declared that just as depreciation must be subtracted, so appreciation must be added. The

fact that the commission finds great difficulty in determining the value of this appreciation in dollars is no excuse for not doing so.

I have previously pointed out to the commission that appreciation is largely a process of nature and that in so far as it involves the expenditure of money that cost is paid for as a part of operating expense, and therefore by the public. If, therefore, the carrier has enjoyed sufficient earnings with which to pay its operating expenses, a proper sum for depreciation, and a return upon the investment, there is no reason in equity why anything should be allowed for appreciation. It seems to me, however, that the Supreme Court clearly indicates that something should be added on this account even though the value so reached may finally be modified by other considerations.

The commission must also add something on account of going concern value. After the decision of the Des Moines gas case it was assumed in many quarters that nothing need be added for going value in a rate case, but the language of that case was squarely opposed to this interpretation, and still later in the Denver water case the court expressly held that an addition for going concern should be made. Probably the most difficult part of your task is the determination of the amount to be added for this item.

In attempting to analyze the concept defined as going concern value, it has seemed to me that there were three varieties, or, more properly expressed, perhaps, three elements, which might attach to and overlap one another in the same property. These may be designated commercial, early losses, and structural.

Commercial.—This kind of going value arises out of the *successful* operation of the property. This property has been established as a going concern. Experience has shown that it is a profitable concern. Plainly this kind of value depends upon the earnings of the railroad past and prospective.

It was this kind of going value which the master declined to allow in the Des Moines case and properly, as the court finally held. Three hundred thousand dollars, in his judgment, is the amount which a purchaser would pay over and above the mere cost of reproducing the property and upon which a seller would insist by reason of the fact that this gas plant has demonstrated its commercial worth.

I can not believe that this kind of going value can be at all considered by you in finding the rate-making value for which you are in search, and for several reasons.

(a) You are asking for the value of the property, not for the value of the business. The value which you seek is a permanent value, depending upon what the carrier is devoting to the public service, and not a value which varies with the fluctuations of the stock market or the ups and downs of net earnings.

Consider for a moment the Texas & Pacific. Here is a property of magnificent prospects which did not materialize. For many years it struggled along, a part of the time in the hands of a receiver and the rest of the time just going in. A few years ago, however, on that portion of the line west of Fort Worth, which had been the poorest portion, oil was discovered, and that development and what goes with it has converted that part of the Texas & Pacific from a worthless into a profitable piece of property. Can it be that this discovery doubled and tripled the value of the property devoted by that carrier to the public service upon which it was entitled to earn a fair return if it could under reasonable rates? If oil were to be struck upon the Texas Midland, would this affect the rate-making value of that property? If so, every gusher which comes in, or goes out, raises or lowers that value.

Let us assume a case of a different kind. Here is a railroad connecting two important business centers and the only road which does connect those centers. Its traffic is large and its net earnings have been ample. The prosperity of this road,

however, had attracted attention. A rival is built. Perhaps two roads are constructed. The business which formerly went by one line is now divided by two or three, the total amount not being materially increased. That railroad which was formerly extremely prosperous can not pay its operating expenses. Is it possible that the building of the second road divided by two the rate-making value of the first and that the building of the third entirely destroyed that value in the case of all three?

The files of the commission afford another most excellent illustration of this same proposition. It will be remembered that some years ago the citizens of Cincinnati brought a petition asking that rates upon the Cincinnati Southern be reduced, and it was demonstrated upon that hearing that the Cincinnati Southern upon the business which it transacted earned a very large return upon its investment, or upon what it would cost to reproduce the property. The petitioners contended that the commission should establish rates which would yield only a fair return upon the cost of that property.

It appeared that the earnings of the Cincinnati Southern were largely from its through business, and that this through business depended upon the fact that it was under lease to the Southern Railway, which was able to divert to it an extensive traffic. Without the Southern Railway, without the through business which came to it from that source, the property would hardly have earned under existing rates a fair return upon its cost.

The commission held in that case that reference must be had, not merely to the Cincinnati Southern, but to other roads handling the same kind of traffic which must be affected by a change in rate upon the Cincinnati Southern, and the Supreme Court accepted that view. Now, it is possible that if upon the termination of the lease of the Southern of this property there were to be a readjustment of connections and of ownership so that the Southern no longer passed over to the Cincinnati Southern its through business, that circumstance would reduce the value of that property from something very much above its cost or its investment to something very much below?

(b) It is not unjust to the carrier if this commercial value be disregarded in the statement of the rate-making value. If a carrier has favorable connections, a strong strategic position, unusual operating conditions, it continues to enjoy the benefit of all these advantages. The Kansas City Southern has shown you that of the five roads within the territory in which it operates, upon which rates must be the same, it has superior advantages of various kinds. If this be so, then, when the common competitive rates are established, the Kansas City Southern under those rates will enjoy net earnings in excess of those of its competitors exactly in proportion as it possesses above them these so-called advantages.

To recognize commercial value in determining the rate-making value would be unjust to the public, for if the value be determined by capitalizing these advantages and a rate fixed upon that value, and if the carrier in the use of that rate also enjoys the benefit of these advantages, is there not a duplication?

(c) In no one of the cases which have come before the United States Supreme Court has the claim that exchange value ought to determine the rate-making value been approved. There was in the original Smyth-Ames case a suggestion that the market value of stocks and bonds should be considered, but that suggestion has been repeated in no subsequent case and never has been acted upon in any case.

The whole proposition involves a legal absurdity. A rate-making value is to be stated for the purpose of determining a fair rate. Commercial value is determined by the rates actually in effect. If, therefore, commercial value is to determine rate-making value, and rate-making value is to determine the rate, then the present rates must be right. The Supreme Court has several times in other connections pointed out the fallacy of this reasoning in a circle.

In the Minnesota rate cases the court had before it the Minneapolis & St. Louis, a very poor road, with the Great Northern and Northern Pacific, two very prosperous roads, but here it is nowhere suggested by any person that a different rule for the ascertainment of the fair value of these properties should be applied for this reason.

It is confidently believed that the commission must reject value as determined by earnings or exchange value as a measure of the rate-making value which is to be stated.

Early losses.—A second kind of going value is associated with early losses in the operation of the property.

It must be admitted that many railroads which ought to have been built and which have subsequently justified their building did not during the first years of their operations yield a proper return upon the investment. Unless the right of the owners of such a property to recoup themselves in later years of prosperity for these early losses is recognized, it must be evident that private capital will not embark in the construction of railroads. Clearly some way must be found by which to permit this recoupment.

At the same time it is equally apparent that losses can not determine the value of a property. Otherwise the property which pays the least would be the most valuable and that value would be an ever-increasing amount. Unless a carrier justifies within a reasonable time its building and is able to make up the losses which it sustained in the early years of its operation, the owners should suffer the loss which ought not to be allowed to enhance the value of the property.

This would mean that there should be a definite period, differing perhaps with different carriers, within which losses might be recouped, and that unless the loss had been made good within this period the value should not be increased on that account. For my own part I am extremely reluctant to admit that an operating loss can ever add to the value of the property upon which the carrier is entitled to an earning for all time. Such losses might well be regarded as an asset of the value and the carrier permitted to amortize the same provided it can do so within a reasonable period to be fixed.

Structural going value.—Before a railroad can be successfully run its operating organization must be built up. This is not accomplished by simply hiring so many people. The relation between these people must be established. A working organization must be developed. The same people, after this organization is perfected, will transact much more business and in a much more satisfactory way than at the beginning.

It is also necessary that the operators of these railroads become familiar with the property. Its weak points and its strong points must be developed. What traffic it can handle to advantage, both through and local, and how that traffic is to be obtained and how handled must be thought out. No organization can economically handle the business of a railroad until that railroad is thoroughly understood.

Finally and perhaps principally, this railroad must establish itself with the public. People must learn that there is such a railroad, must come to know the extent to which it can be used, must have confidence in its ability to transact the business which is committed to it.

This kind of going value inheres, so to speak, in the property itself. This railroad, considered purely as an instrument for the obtaining and the transacting of business, has this added element of value. This property has been put into motion. It has become an instrument of traffic. It has acquired a business and is handling that business. It has developed its organization for that purpose. It has established itself as a railroad in the estimation of the public. This kind of going value attaches to the property itself and is the same whether the exchange value of that property is great or small.

If I am right in my contention that structural going concern value and appreciation should be added to the depreciated value of the property, in what way are these values to

be determined? This is for the commission and is entirely a question of judgment. The commission is under no obligation to state the mental processes by which it arrives at that conclusion, nor does it seem to me that it should attempt to do so. I wish, however, to point out to the commission the method which I would myself pursue in the hope that it may lead to discussion which will be of real help to the commission in the solving of this problem.

Take a railroad which is just completed and ready to be put into operation. It starts off. From the first its equipment begins to depreciate and continues to depreciate. With the road this is otherwise. Certain parts of that portion of the property begin to appreciate from the first. The facts in this respect need not be repeated. The road solidifies, its weak spots develop, it becomes adapted to its use. Its organization is perfected. Its business is established. All this requires a certain amount of time and costs a certain amount of money and adds to the value of this railroad.

I have said in my own mind that the value of this property, considered as an instrument of traffic, as a means of getting and transacting business, would be as great at the end of five years as at the beginning. In some respects the property has deteriorated, in other respects it has improved, and above all it has been put into operation. This, of course, is entirely a question of judgment which would be answered very differently by different people.

If this assumption is correct it becomes possible to state the combined amount of appreciation and going value of this kind, for while there is no way in which we can very satisfactorily determine appreciation as such or going concern value as such, we can determine the depreciation, and if the depreciation is equal to the combined appreciation and going concern value, you have in that way a figure which can be used.

Now, depreciation in the average railroad in the first five years is between 5 and 10 per cent, depending upon the property. It should be noted that we are speaking of the road and not of the equipment. If we assume that appreciation and going concern value are some 7 or 8 per cent of the cost of reproducing the road, including general expenditure but excluding land, that sum should be added to the depreciated cost of the property in reaching its value.

Up to this point we have, I think, followed the plain indication of the Supreme Court. For the purpose of determining what is to be done with the value thus obtained reference may be had to an actual case, and the Texas Midland may be selected as that case.

Stated in accordance with the plan suggested, the figures would be as follows:

Cost of reproduction, less depreciation.....	\$2,597,389
Add 7½ per cent of cost of road new, including general expenditures, excluding land.....	214,025
Present value of lands.....	254,749
Materials and supplies.....	96,875
Working capital	60,000
Total	\$3,223,038

The report finds that the investment upon the Texas Midland may equal, but does not exceed, \$2,893,360. Cost of reproduction new plus the present value of lands is \$3,715,835.

If we subtract from the value above suggested materials and supplies and working capital, since these are not included in original cost or investment, we have left \$3,066,172, which is \$649,000 less than cost of reproduction new plus present value of lands, and about \$175,000 in excess of original cost, but the difference between the original cost and the present value of lands is over \$200,000, which takes care of the entire excess of the proposed value over investment.

For my own part, considering the history of the Texas Midland, I am satisfied, from an examination of the whole matter, that something in the vicinity of \$3,225,000 would be a fair value upon which to permit the owners of this property to earn. That value includes materials and supplies

and working capital. The materials and supplies are stated at the amount actually on hand upon the date of valuation. Ordinarily this figure can probably be accepted.

In some investigations made by me for the director general I reached the conclusion that operating revenues for one month would fairly indicate the amount which should be allowed for working capital and that rule has been applied in this case. I do not suggest it to the commission with much confidence.

It would probably be sufficient if the commission was to omit these two items from the value stated, supplying them later in case an actual use of a total rate-making value were to be made. Owing to change in prices, both materials and supplies and working capital would exceed today what they properly were in 1914.

If an attempt were made to state a value for the Kansas City Southern by the same method which has been applied to the Texas Midland, a somewhat less satisfactory conclusion would be reached. In its statistical return to the commission as of June 30, 1914, the Kansas City Southern reported that it was unable to state the cost of its property. The accountants of the commission have gone back to the original construction records, as they were kept by the construction companies, and from these and the records of the carrier have been able to determine the amount actually invested. The carrier itself agrees that this sum did not exceed in round numbers \$45,700,000.

If a value were to be built up as in case of the Texas Midland it would be some \$4,000,000 or \$5,000,000 less than these actual expenditures. This is very largely accounted for by the fact that in case of the Kansas City Southern there has been practically no increase in the value of its lands, that is, the present value as stated by us is only a trifle larger than the actual original cost, a very unusual thing with as old a property as this.

It will also be noted from an examination of the history of the property that this railroad has in recent years been rebuilt so as to secure much greater economy of operation, grades having been eliminated, curves reduced, heavier rail laid, etc. In the course of this reconstruction large amounts of property were of necessity abandoned, and it is quite probable that more or less of the property retired may not have been written out of the accounts of the carrier.

The history of the development of this carrier presents a good illustration of a class of items which in my opinion should be added to the value of the property. This railroad was projected and built to serve as the most direct line between Kansas City, representing the great grain-producing area west of the Mississippi river, and the Gulf of Mexico. It was to be the short line by which the products of that enormous territory would reach tidewater.

In order to accomplish this purpose it was necessary to make a connection with the ocean. The terminus of the road must be such that ocean-going vessels could load and unload at its docks. To accomplish this it was necessary to construct a canal and a tidal basin at Port Arthur at the expense of about \$1,000,000. When this had been constructed and was in operation it was conveyed to the United States government upon condition that the government should maintain it and should also make Port Arthur a port of import and export.

Now, it seems to me that this \$1,000,000, which was actually expended in the construction of this tidal basin, is an element of value which should be added to the value of the Kansas City Southern. That railroad is practically worthless without it. It was a part of the original plan under which the road was constructed. The promoters of the road actually expended that money, and the facility could not have been furnished, the road could not have been completed without its expenditure. Looking to the purposes for which it was built it was cheaper and more advantageous in every way for the carrier to convey this property to the government as it did

rather than to retain it itself. It seems to me, therefore, that in equity and good conscience you must add the cost of producing that facility to the value of the Kansas City Southern as otherwise stated.

You will frequently find, I think, as you examine the various properties coming before you similar items of expenditure. The outlay has been necessary in the development of the property. It represents an actual expenditure and often a thing now in existence, but it is not embraced in cost of reproduction with or without depreciation. It has been our theory that in showing cost of reproduction the engineer should deal only with the property in existence. That he can see; about that he knows. If you allow him to go further and to speculate as to what may have been done or may not have been done and the cost of it you introduce into that figure an element of uncertainty which ought not to be there. It has seemed much better to us that items like the canal and turning basin of the Kansas City Southern should be presented to the commission when it fixes the value of the property. Whether a particular item should be allowed is for the commission in each case.

The state commissions have been inclined to insist that original cost should control. This, under the decisions of the Supreme Court, can not be since it is the *present value* of the property and not its *original cost* which you are to determine. Original cost is, however, one of the items for consideration.

It should be noted that there may be a distinction between original cost and investment. For example, the Elgin, Joliet & Eastern, one of the carriers before the commission in this proceeding, claims to have made additions to its property now in existence to the amount of approximately \$1,500,000 out of operating expenses. The items of property so paid for appear in our inventory and would be included in the original cost of the property now in existence as being devoted to the public service. Upon the other hand, that item would not be included in investment. If the claim of the carrier were sustained by our investigation that item would be reported separately for such consideration as the commission might give it.

Original cost is not estimated except in a limited way, as indicated in the Texas Midland opinion, but is always reported when the records of the carrier permit. Every effort is made to ascertain and report the investment, and this can frequently be done with a considerable degree of assurance. Just what use can be made of these two items of information must depend on the individual case. Certainly they are both of significance and should always receive careful attention.

What I am attempting to do is to point out to the commission that the Supreme Court has apparently decided:

1. That the fixing of a final value is an act of judgment upon a review of all the relevant facts; but
2. That in reviewing and applying these facts up to a certain point a definite plan has been approved, which can in ordinary cases be safely followed.

V.

Assuming that a value has been fixed as of a certain date, in what way is that value to be kept good? It has been often asserted that before this valuation could be completed it would be out of date and of no service, and unless some method can be devised by which the valuation can be kept up to date, by which we can know from year to year what the value of these properties is, the valuation itself will in fact soon be worthless or at least of diminished and diminishing account.

My own thought has been that when a value had once been determined as of a certain date, we might add to this value actual expenditures for additions and betterments and deduct actual cost of retirements.

Order 3 has been adopted for the purpose of accomplishing this thing. Under that order carriers are required to keep in a certain specified way their records of additions and retirements. An authority must be issued in every case, either for

the addition or for the retirement. In case of the addition a completion report must be made up in every instance. These completion reports are not filed with the commission, since to care for them all would be an almost intolerable burden, and, it seemed to us, an unnecessary one, but the carrier is required to file from time to time a list of these projects and at the end of each year is required to file a statement showing the amount of money expended in each project and the cost of each retirement. We must know whether these amounts are properly arrived at, and this will require a considerable but not an excessive amount of work when the system is once fairly inaugurated and under way.

Assuming that these records have been properly policed and that we have at the end of each year a statement of retirements and additions, would it not be entirely fair to state the value of this property by subtracting the cost of the retirement and adding the cost of the betterment. It is true that you do pass in a way from the structural to the investment theory, but it is also true that nothing perhaps more fairly represents the value of the betterment, for the time being, at least, than its actual cost when known.

These completion reports are kept by valuation sections and in the units of our inventory, so that it would be possible at any time, were it desired, to bring these inventories to date and apply whatever price might seem just. Personally I do not believe this will ever be done. It would be a considerable task to do it after an interval of several years, but the means will be available.

Two possible difficulties exist in the accomplishing of this plan—depreciation of structures and increase in value of lands.

If the commission would prescribe a definite rate of depreciation for the different classes of equipment the books of the carrier would at any time show roughly the depreciated value of its equipment. In case of the average railroad more than 10 or 15 years old, it can safely be assumed that maintenance takes care of depreciation. Carriers insist, and the best thought I have been able to give the matter convinces me of the correctness of their position, that this rule can be safely applied. A new road must, of course, be depreciated during the early years of its operation, and special properties must be individually treated. For example, maintenance would not take care of depreciation in case of the terminal company which owns the South Station at Boston, upon which an engineering report has just been submitted. The principal item there is the station itself, and while that building would stand for an almost indefinite time, still it is reasonably certain that in the changing needs and conditions of Boston that station, in process of time, will become obsolete. Some annual allowance for depreciation should therefore be made. On the whole, however, depreciation offers no obstacle to the execution of this plan.

With lands it is different. Carrier lands have been increasing in most sections of this country for the last half century. They are increasing rapidly just now, and while the prices of today are abnormal and will recede, still at the end of 10 or 20 years the present value of carrier lands as we report that item will undoubtedly be greater and in some instances materially greater than on valuation date.

Apparently there is no way in which this item can be corrected save through a reappraisal, or what is equivalent to that. For my own part I very strongly feel that carriers ought not to be allowed any increment of value in case of their carrier lands. The right to use private lands for the construction and maintenance of these avenues of public transportation is not property; it is more analogous to a franchise. There is little distinction between the right granted a carrier by a municipality to use a portion of its street and that acquired under its charter through the exercise of eminent domain. It is perhaps just to allow this increase in value up to the present time since it has been generally understood that this was to be done; but such an added value has no basis of

equity and ought to be forbidden probably by an act of Congress.

VI.

This war, with its consequent inflation of values, has introduced another element of great significance into this valuation. Our engineering prices are determined as of June 30, 1914. The cost of reproducing a railroad today would be at least 75 per cent more than in 1914 and the cost of equipping it would be two and one-half times as much. If reproduction cost is to govern, and if present values are to determine cost of reproduction, the value of the railroad property of this country has been doubled without the expenditure of a dollar upon the part of its owners.

It is evident that if these prices continue permanent, even to a modified extent, a question of tremendous importance is presented which may even involve a constitutional amendment, and upon that question I express no opinion whatever. If the commission were to make a valuation upon the basis of present prices and to establish rates which would yield a fair return upon that valuation, most unfortunate results must ensue. We should assume for the present that these prices are abnormal, as most men believe they are, and should proceed accordingly.

Upon this assumption it seems to me that exactly the method above outlined should be followed. A value should be determined as of the valuation date of each property, applying prices of 1914 or normal prices, and to that value should be added the actual expenditures made by the carrier for additions and betterments to its property. In that way the carrier will be given the benefit of higher prices in so far as it has been obliged to pay those prices in the improvement of its property. This would be entirely just as to those roads which bear a valuation date previous to June 30, 1916, for up to that time there had been no considerable advance in price. A moment's consideration will show that it might not be just to a road bearing a later valuation date.

The Texas Midland was valued as of June 30, 1914, and all additions since that date are to be put in at actual cost. Suppose that the Texas Midland were to be valued as of June 30, 1919. Assume also that certain additions and betterments had been made during the years 1917, 1918, and 1919. These additions would appear in the inventory and to that inventory would be applied the prices of 1914. The carrier would not therefore be allowed the full amount of its expenditures for improvements in recent years. This would manifestly operate to the disadvantage of those carriers whose valuation date is subsequent to June 30, 1916, when prices began to advance.

For the purpose of equalizing this it has been the thought of the Bureau of Valuation that while we should make up our inventory as of the valuation date, and should apply prices as of June 30, 1914, we should permit the carrier to show the excess of its actual expenditures for additions and betterments over the price as established by us since prices began to advance and that this excess should be added to the cost of reproduction as of the valuation date.

Lands can not be handled in this manner. If the carrier is to be allowed for the unearned increment in value of its operative lands, I see no way in which this can be arrived at with accuracy except by a new appraisal. An estimate of the percentage of increase could probably be made with considerable accuracy.

I may perhaps say that up the present time there has been no great increase in the value of terminal lands and these constitute the major part of that item. Rural lands have in some instances in the newer parts of the country very materially advanced.

As stated in the beginning I have not attempted in this memorandum to discuss or apply court decisions. All I have attempted to do here is to merely suggest a practical method which might be followed in stating a final value. I

feel very strongly that the present emergency requires that the commission should at the earliest possible moment begin the determination of such values and should continue it as rapidly as may be.

It has all along been my thought that the commission ought not to state a value until it could know what the general effect of any plan adopted by it might be. Our work has gone far enough so that I feel satisfied in my own mind that the plan suggested would not result in any violent dislocation of railroad values and would be fairly just to the carrier and the public.

Plumb Plan League "News"

THE ISSUE FOR FEBRUARY 7 of "Labor," the weekly newspaper published by the Plumb Plan League, carries on its first page an editorial in large type headed "Wanted; 200 Workers and Farmers in Congress," in which labor and the farmer are advised to begin to organize now and to mobilize their votes to accomplish this purpose. The editorial says there are nearly 90,000,000 wage earners and farmers in the United States, yet they have not more than a score of representatives in both branches of Congress, whereas the lawyers have 260 members and the bankers have many times their quota, as have the packers and food gamblers. The steel trust, the sugar trust, the lumber trust and the mine owners are said to be more than adequately represented.

This issue of "Labor" has been looked forward to with some interest because of its previous predictions that the conferees on the railroad bill would be unable to agree, that there would be no railroad legislation by March 1, and that the railroads would be retained by the government. The conferees announced their agreement on Wednesday, February 4, in the form of a compromise between the Esch and Cummins bills, without the anti-strike clause, but including the rate-making rule which has been so violently opposed by the labor press. The Plumb paper does not include this news. Its story on the conferees says Congress may soon make a final decision on the railroad issue and that everything indicates that the conferees on the railroad bills have encountered another snag and that their plan to report a compromise bill will not succeed. It is stated that "the conferee" failure to reach an agreement is due not to their inability to get together, but to the fact that they are afraid to present to the House and Senate a compromise which is acceptable to Wall Street. They fear that such a proposal would be overwhelmingly defeated.

The Plumb paper continues to discuss the Esch and Cummins bills as if they were intended to return the railroads to their owners on March 1 and to ignore the fact that that has been accomplished by the President's proclamation relinquishing the roads as of March 1, which was issued on December 24 without waiting for the legislation; and it strongly advises its readers to "write today and ask your Senators and Congressmen to vote against any conference report which returns the railroads to private ownership and to support the proposition looking to a two years extension of federal control."

"Labor" also prints a letter from Robert W. Woolley of the Interstate Commerce Commission, calling attention to the fact that the paper in its previous issue had misquoted him as advocating government ownership of railroads in a speech at Washington. Mr. Woolley begged to say that in no statement of his, no matter when and where delivered, has there been a declaration for government ownership; that what he has said is that "it will never do to return to the old order of things and that the only practical thing to do in the present situation is to continue federal control for a period of at least two years in order that time and American genius may be given a chance to work out a permanent solution of the railroad problem."

The Kin-Han Railway Buys Prairie Type Locomotives

THE KIN-HAN RAILWAY of China, running from Peking to Hankow, has purchased 10 Prairie type locomotives from the Lima Locomotive Works. These locomotives are to be used in either freight or passenger service.

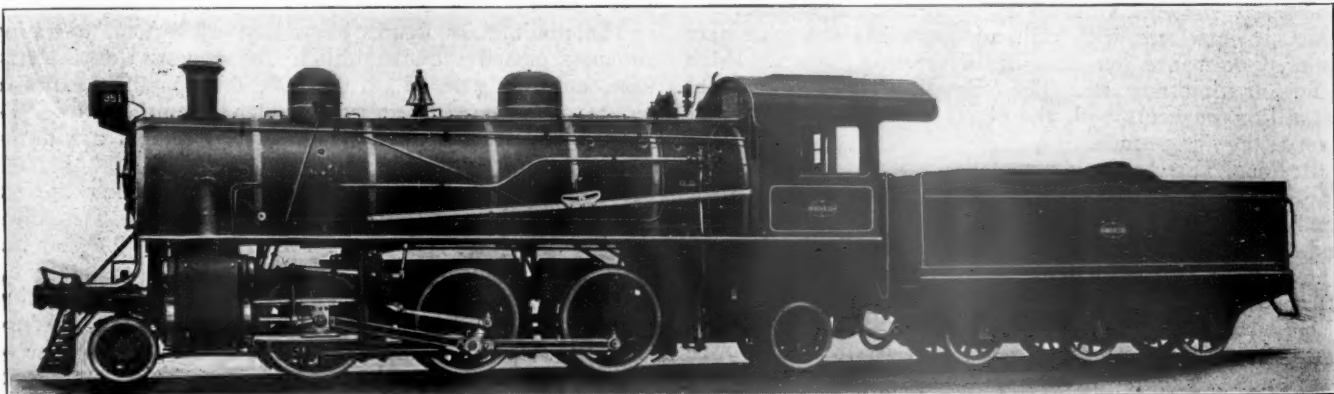
A number of difficult engineering problems, due to track conditions, were encountered in the design of these locomotives. There were very close limitations of weight for both the engine and tender. There were also rigid requirements in connection with the counterbalancing of the reciprocating parts and the locomotives were required to pass over 22-deg. curves. To meet these conditions and produce a satisfactory design of locomotive required great care in designing and construction. The engines have been built and fully meet the requirements in all particulars.

The limitations of weights made it necessary to design all the parts as light as possible, consistent with the proper strength. The built-up type of construction of plates and angles was freely used in the main frames and the tender frame bracing wherever it was found that such a construction could be satisfactorily employed. Care was taken to produce a symmetrical, clean looking design, and wherever it was feasible the parts were made in one piece. For example, the

4 ft. 9 in. wide and is 6 ft. 2 in. long at the floor, extending back on the slope sheet for a distance of 5 ft., giving a coal capacity of 13,300 lb. The water capacity of the tender is 4,800 U. S. gallons.

Great care was necessary in making the tender design to meet the limitations of axle load as given in the specification. In general, the locomotive was designed along the lines of American practice and the builders were given a free hand in the construction of details so long as they were kept within the limitations of the specifications. The general dimensions of the locomotive, as well as the actual weights as compared with the weight limitations are given in the following table.

Engine		
	Actual weights	Limit of weight
Front drivers	32,600	33,000
Main drivers	32,600	33,000
Back drivers	32,000	33,000
Total drivers	97,200	99,000
Engine truck	28,400	28,500
Trailing truck	30,400	31,300
Engine, total	156,000	158,800
Tender		
Front wheel	30,400	30,800
Middle wheel	30,600	30,800
Back wheel	30,600	30,800
Total	91,600	92,400
General Data		
Gage	4 ft. 8½ in.	
Service	Mixed	
Fuel	Soft coal	



Prairie Type Locomotive with Six-Wheel Tender Built by the Lima Locomotive Works for the Kin-Han Railway of China

guide yoke and the link supports were made in an integral casting, thus eliminating bolted connections and reducing the weight of the parts.

The limit for the dynamic augment at a speed of 60 km. (37.3 miles) per hour was specified at 15 per cent of the static wheel load. In order to come within these requirements and at the same time provide the proper counterbalance, the reciprocating parts were made of very light design and a special method was employed to secure an exact adjustment of the counterweights in the driving wheels. The dynamic augment requirements were met and by means of careful adjustment the proper counterbalance was secured for the reciprocating weights.

The boiler is of the extended wagon top type, radially stayed and fitted with a combustion chamber. The locomotives are equipped with superheaters and the reversing mechanism is of the Lawson patented screw type, which provides for easy operation and is fitted with a positive locking device and an indicator which shows the exact cut-off at which the engine is being operated.

The tender is of the six-wheel, rigid wheel base type, with plate side frames, the journal boxes working in pedestals riveted to the outside plates of the frame. The two rear pairs of wheels under the tender are equalized. The tender tank is 20 ft. 8 in. long by 9 ft. 8 in. wide by 4 ft. 2 in. high inside, and is built up of ¼-in. steel plate reinforced with 2½-in. by 2½-in. by 5/16-in. angles. The coal space is

Tractive effort	25,500 lb.
Weight in working order	156,000 lb.
Weight on drivers	97,200 lb.
Weight of engine and tender in working order	247,600 lb.
Wheel base, driving	13 ft. 10 in.
Wheel base, total	31 ft. 7 in.
Wheel base, engine and tender	53 ft. 10 in.
Cylinders, diameter and stroke	20 in. by 26 in.

Valves	
Kind	Piston
Diameter	12 in.

Wheels	
Driving, diameter over tires	59 in.
Driving journals, main, diameter and length	8½ in. by 11 in.

Boiler	
Style	Extended wagon top
Working pressure	170 lb. per sq. in.
Outside diameter of first ring	61½ in.
Firebox, length and width	84 in. by 54½ in.
Tubes, number and outside diameter	132—2 in.
Flues, number and outside diameter	21—5¼ in.
Heating surface, tubes and flues	1,418 sq. ft.
Heating surface, firebox, including arch tubes	207 sq. ft.
Heating surface, total	1,625 sq. ft.
Superheater heating surface	366 sq. ft.
Grate area	31.6 sq. ft.

Tender	
Tank	U-shape
Frame	Plate
Weight	91,600 lb.
Journals, diameter and length	5½ in. by 10¼ in.
Water capacity	4,800 U. S. gal.
Coal capacity	13,350 tons

THE PORT OF SAGUA, CUBA, is to be improved, principally by means of dredging, at a cost of about \$2,000,000.

Railroads Hampered by Severe Weather Conditions

DIRECTOR GENERAL HINES on February 6 authorized the following:

Severe storms ranging over practically the entire eastern section east of Ohio and extending as far south as West Virginia have seriously interfered with railroad operations in the last 48 hours. These storms have added to the difficulties which resulted in January and December from storms in the West, in Michigan, in Ohio and in a large part of the bituminous coal producing region. The situation has been further complicated by the wide prevalence of influenza among railroad employees. For instance reports this morning showed 2,000 employees of the New York Central alone ill with the influenza. These unsatisfactory conditions, of course, interfere with railroad traffic, and it is to be anticipated that they will influence railroad earnings unsatisfactorily. However, the regional directors affected report that the officers and employees of the various railroads are doing their utmost to keep traffic moving and overcome the extreme difficulties.

Regional Director Hardin of the Eastern region, with headquarters at New York, has reported a severe blizzard in New England, the Middle Atlantic states and in the northern part of New York. Floating operations at New York have been practically suspended during the storms. The weather has seriously interfered with railroad operations and passenger train performance, on account of freezing switches, high winds, drifting snow, etc. The railroads are loading material for filling washouts with the object of restoring service as soon as the tide permits.

Regional Director Baldwin of the Allegheny region, with headquarters at Philadelphia, has reported severe weather conditions throughout the eastern part of his region, the south end of West Jersey and Seashore Railroad being covered with water and necessitating the use of steam engines to pull electric trains, 800 feet of the Ocean City branch having been washed out, the Stone Harbor branch having been partially washed out and tracks also being out of service near Townsend Inlet. The Wildwood branch was also out of service on account of high water and part of the tracks at Cape May was washed out.

Regional Director Maher of the Pocahontas region with headquarters at Roanoke, reported heavy rains along the Virginian Railroad, with a number of small slides on New River division. He also reported water over Low street in Norfolk, Va. Mr. Maher pointed out that the dumping of coal at Hampton Roads was light on account of danger in undertaking to berth or unberth vessels in the gale. The situation at Norfolk and Hampton Roads has interfered with the delivery of coal to other parts of the East.

Weather conditions in many parts of the country were worse in December and January than they have been for several years previous. For instance, the mean monthly temperature in Chicago in the month of December, 1919, was 21.4, which was lower than the mean monthly temperature of December, 1918-17-16-15 and '14, and, similarly, the lowest temperature in Chicago in December, 1919, was 8 degrees below zero, whereas the lowest temperature in the five preceding years was 3 degrees below zero in December, 1917. In Chicago, Toledo, Duluth, St. Paul, and Albany, N. Y., the mean monthly temperature was lower in January of this year than in January of any of the five preceding years with the single exception of January, 1918. The lowest temperature in Albany in January, 1920, was 17 degrees below zero, which was lower by 6 degrees than in the January of the five preceding years.

In spite of these adverse weather conditions the railroads loaded more traffic in January and December just past than in the two preceding years. The total number of cars loaded

in the four weeks ended January 24, 1920, which are the last figures available, was 3,322,928 cars, whereas during the same period in 1919, 2,829,444 cars were loaded and in the same period in 1918, 2,619,481 cars were loaded. In the four weeks ended December 27, 1919, a total of 3,100,972 cars were loaded, whereas in the same period in 1918, 3,004,179 cars were loaded and in the same period of 1917, 3,044,610 cars were loaded.

Railroads in 1919 Earned Only Half of Standard Return Set by Cummins Bill

THE NET OPERATING INCOME of the Class I railroads in 1919 was about \$515,000,000, which represents a return of only 2¾ per cent on their estimated investment of \$19,000,000,000, according to a preliminary compilation of the monthly returns to the Interstate Commerce Commission. This is just half of the 5½ per cent prescribed as the standard in the Cummins-Esch bill as agreed upon by the conferee committee and represents about 57 per cent of the standard return guaranteed to the railroads during federal control. The Railroad Administration statements increase the amount somewhat by charging back into 1918 the retroactive wage payments which extend back into that year although paid in 1919.

The preliminary figures show that while total operating revenues passed the five billion dollar mark for the first time, amounting to \$5,181,000,000, the operating expenses and taxes increased by an even greater amount, totalling \$4,666,000,000 for the year. The deficit as compared with the standard return on this basis is about \$390,000,000, although Mr. Hines' preliminary statement, after recasting the accounts, placed it at \$349,000,000. The Railroad Administration's complete statement for December and the year has not yet been issued. Figures for 193 roads, operating 232,000 miles, for December show operating revenues amounting to \$450,507,568, an increase of 2.69 per cent over December, 1918; operating expenses, \$412,326,315, an increase of 4.54 per cent; taxes, \$22,038,030, an increase of 50 per cent, and net operating income, \$12,410,261, a decrease of 53.92 per cent. For the Eastern district the decrease in net operating income was 137 per cent, for the Southern district it was 40 per cent and for the Western district it was 5.74 per cent.

The railroads having operating revenues above \$25,000,000 (which report about 80 per cent of the total operating revenues of the Class I roads), according to the monthly report of the Interstate Commerce Commission, earned in 1919 a net operating income of \$429,551,778, as compared with \$546,687,677 in 1918. Their total operating revenues were \$4,127,463,039, as compared with \$3,910,928,814 in 1918, and their total operating expenses were \$3,498,244,648, as compared with \$3,188,919,166. Two of these roads, the Chicago & Eastern Illinois, and the Pittsburgh, Cincinnati, Chicago & St. Louis, had operating deficits for the year, while 16 had deficits for December. For December the \$25,000,000 roads had a net operating income of \$14,089,435, as compared with \$21,647,841 in 1918.

Senator Hoke Smith's resolution, noticed in the *Railway Age* of January 16, page 264, calling for an investigation of the living conditions of trainmen when lying over at terminals remote from their homes, and of feasibility of requiring railroad companies to furnish better accommodations, was adopted by the Senate; and the Interstate Commerce Commission, in accordance with the resolution, has ordered an inquiry.

Annual Report of the Division of Operation

Demobilization, Revival of Business, and Danger of Coal Shortage Presented Difficult Problems

CONTINUANCE OF MANY reforms in railroad operation inaugurated under the federal control of the lines was recommended in the annual report for 1919 of W. T. Tyler, director, Division of Operation of the United States Railroad Administration, submitted to Director General Walker D. Hines. The report pointed out in detail the efficiencies and economies accomplished in various phases of railroad operation and the advantages which it says would follow the continuance of these measures when the federal control of the roads is terminated.

Director Tyler emphasized the benefits derived from the permit system for the control of freight shipments. He pointed out the congestion which results from indiscriminate efforts to move freight for which the railroads have no outlet. "The trouble is," he said, "that huge quantities of freight are loaded and started forward for which there is no outlet, which are in excess of the ability of the consignee to accept promptly, which exceed the digestive capacity of gateways and terminals, or for which vessels are not available at the ports." The remedy for this condition, Mr. Tyler's report said, is the control of this freight at its source through the permit system, to the measure of the consignee's ability to accept, the railroad's facilities, or the ports' capacity. The report continued:

"With the advent this year of heavy traffic, the physical limitations of the railroad plant as well as the question of vessel supply promptly made themselves felt, and had it not been for the vigorous use of the permit system as developed under federal control serious congestions would undoubtedly have occurred.

As it was, the operation of the permit system made it possible to keep the heavy export business moving through the ports, keep the coal for tidewater and lake transshipments under control, move the heavy grain crop in an orderly manner, and at the same time handle a maximum volume of other business through the avoidance of congestion and the freeing for other loading of cars power and facilities which would not otherwise have been available. From time to time shortages resulted in 1919 in the car supply for some commodities, but these shortages were minimized through the permit system.

"It is exceedingly important that the substantial benefits of the permit system should not be lost with the end of federal control and arrangements should be made for its continuance under some central organization of the carriers, such organization to have power to establish permanent or temporary agencies for the issuances of permits from time to time as may be necessary. This organization should also be authorized to require of the various roads the reports and information necessary to the successful handling of the permit system."

Director Tyler, commenting on the handling of the car supply for the year, said: "Another factor in the successful handling of the heavy business has been the centralized control of the cars which has made it possible to relocate equipment without reference to initials in accordance with the demands of commerce. This is another feature which should be continued under proper limitations under a central organization of the railroads themselves.

"The common use of cars was not only successful with reference to the box, stock, and flat cars, but it was particularly so as in the case of refrigerator cars, which since July 1, 1918, have been handled by the Car Service Section through a branch office located at Chicago. Tank cars have

also been handled through this agency. With an increase of more than 20 per cent in the movement of fruits and vegetables compared with last year and an increase in the distances hauled, this business was handled with signal success, notwithstanding what would, except for this centralized control, have been a serious shortage of refrigerator cars. Some shortages in refrigerator cars have resulted, particularly on the Pacific Coast, and additional refrigerators are needed by the railroads."

In its formal recommendations as to the handling of the car supply, the report said:

"The experience of the Car Service Section during the past years has made it quite clear that there should be continued some uniformity of method of car control and distribution as between portions of the country, railroads, stations and shippers. The result of the two years' work has produced, among other things, uniform rules to govern the distribution of coal cars and grain cars, and this establishes practical uniformity with respect to the car supply for the two most important commodities handled by the railroads. There is, however, room for improvement along these lines with respect to other of the important tonnage-producing articles.

"It is therefore recommended—

"That the railroads continue the work of establishing uniformity in rules governing car supply for the various important commodities handled.

"That the campaign which has been continued now for two years under varying circumstances for the more effective utilization of equipment by heavier loading be continued.

"That every effort be made to continue and extend the pooling of lake and tidewater coal; the railroads maintaining the necessary organizations at all times to handle traffic so pooled.

"That arrangements be made to set up, at least in skeletonized form, the organization necessary to control the movement of traffic to and via ports whenever traffic conditions warrant by the placing of embargoes and the issuance of permits."

Looking forward to the conditions which the railroads must meet in the near future, the report said:

"The locomotives of the country are in better condition as a whole than they have ever been before during a period of very heavy business, and while they number above 65,100, an adequate program for new power should be adopted at an early date in order to take care of the commerce which are abundant reasons for believing must be handled by the railroads in the months and years which lie just ahead.

"There have been completed in the first nine months of 1919 442 locomotives which were ordered prior to federal control, 989 locomotives built to standardized design prepared by the United States Railroad Administration, and 103 locomotives constructed in railroad shops, making a total of 1,534 new locomotives placed in service during the first nine months of the current year.

"The program in repairing freight cars, with the new cars added, has resulted in rapidly making available an increased number of cars for the handling of the business of the fall and winter, but these cars will not be sufficient for the requirements of next year, unless all signs fail, and a comprehensive car-building program should be adopted by the railroads as early as practicable.

"Inadequate facilities for making repairs to locomotives

and cars which were emphasized by railroads receiving heavier power during the war without proportionate increases in facilities made maintenance of equipment a difficult operation. Wherever possible terminal facilities were consolidated to promote efficiency as well as to reduce overhead expenses. This permitted us to utilize the best of facilities for the benefit of all the roads; 844 terminals have been so consolidated during federal operation.

"From the beginning the mechanical department of the Division of Operation has diligently endeavored to maintain the equipment without any idea that economies should or could be realized by reducing maintenance which the equipment ought to receive, but with the thought that the fullest possible measure of maintenance should be given, trying through greater vigilance to get more maintenance per dollar of money expended than would be obtained if such vigilance were lacking."

Discussing standardization of locomotives and freight cars, Director Tyler reported:

"Experience with these standardized locomotives and cars has shown them to be of exceptionally good design and construction. The locomotives, wherever tested against similar locomotives built to individual designs, have shown superiority in the matter of efficiency and economy in operation, and while it is yet too early to give definite figures with respect to maintenance, it is being demonstrated that the standardized fittings and design of parts will reduce maintenance costs."

The coordination of terminals was recommended by Director Tyler as a continuing policy for the railroads. He said:

"That the Railroad Administration has been justified in the consolidation of terminals is shown by the results obtained from this operation. The terminals have not only been operated more economically but more efficiently, congestions have been lessened or avoided, terminal delays reduced, car supply increased by the saving of cars from less-carload service by consolidating those formerly loaded in duplicate for the same destinations, empty car mileage avoided, and the interchange of cars with connections greatly facilitated.

"The benefits from the unification of terminals are so many and the improvement of the service so marked that it is to be hoped that whatever the status of the railroads, there may be serious consideration given to each case of consolidation, unification, or coordination before it is discontinued.

"This should be done, also, in each case of the use of single-track parallel lines as double track and the coordination or unification of water terminals, etc., so that the plans worked out under Federal control which have resulted in greater transportation efficiency may be retained under private operation where it is practicable to do so."

In discussing maintenance of way work, Director Tyler said:

"In handling the maintenance of way work one of the most important items that had to be met was the increasing cost of labor and material. As expenditures for maintenance of way and structures represent about one-sixth of the total operating expenses, naturally this phase of railroad administration has been prominent during the year and a consistent effort has been made to increase efficiency. Regional directors have held frequent conferences on the subject with their federal managers, who in turn have gone into it with their subordinates with a view to stimulating interest in the effort to improve supervision over maintenance matters and to increase the efficiency of the workmen. It is felt that important progress has been made and that the work done in this direction will be a benefit to the railroads for the future."

Outlining the conditions which the Division of Operation confronted during the year, the report said:

"The year 1919 has been divided very evenly between a period of business depression, during which there was a very general hesitation on the part of the purchasers due to unsettled price conditions, and one of tremendous business revival in practically all lines.

"From a condition in which there were stored over 480,000 freight cars for which there was no loading, developments were such that a little after midyear these were not only quickly absorbed, but a condition of shortage developed.

"In short, the recovery of business was rapid and so complete that from the smallest month's business since 1915 (February, 1919) with its 25,700,000 ton miles, the tons one mile for October totaled 40,300,000, or the greatest in the history of our railroads except for the one month of August, 1918, when the war pressure was at its height."

Director Tyler's report dwelt on the enormous amount of transportation involved in the handling of troops during the war and during a large part of 1919. He pointed out that on November 30, 1919, approximately 94 per cent of the 4,000,000 men called to the colors had been released from service and returned to their homes.

He recited that from April, 1917, to November 30, 1919, there had been moved 15,724,058 men, involving the equivalent of nearly 7,000,000,000 miles of travel by one passenger; he also pointed out that 25,103 special trains had been operated, these trains averaging 424 men per train and 759 miles traveled per train, 12 cars per train, and 21 miles per hour. He showed that a total of 279,106 passenger cars, including sleeping cars, 22,300 baggage cars, and 26,524 special freight cars for troop impedimenta, totaling 327,930 cars, had been used in connection with troop movements. He also showed that a total of 150,000 sick and wounded men have been moved by the railroads from ports to hospitals, etc., throughout the country, for which the most careful preparation and best possible service was arranged. Two hundred and fifteen cars were especially assigned in this service, and solid trains with sick and wounded were run from New York as far as Camp Kearney, Calif., and Camp Lewis, Wash.

Director Tyler's report showed that in May, 1919, the Secretary of War said, regarding the handling of troops by the railroads: "The splendid cooperation received from the railroads, both in prompt dispatch of the troops overseas and in handling the return movement, is greatly appreciated by the War Department, and the magnitude of this undertaking is the admiration of all."

The report reviewed in detail the steps taken by the division to handle the movement of the grain crop, coal and coke production, commodities moving in refrigerator cars, and other large freight movements through the Car Service Section.

Early in September it was determined to be necessary to move a minimum of 11,000,000 tons of coal a week in order to provide for the needs of the country. From that time on until the beginning of the bituminous coal-miners' strike on November 1, this figure of 11,000,000 tons a week was exceeded each week, the total rising to 13,200,000 tons during the week ended October 25; this figure constituting a new high record for the country. Subsequent to the coal strike intensive efforts were again made to load a maximum of coal, with the result that the movement on December 29 had reached the rate of 13,000,000 tons a week.

As to the grain crop, report showed that according to the Wheat Corporation's latest available records, there were moved July 1 to December 12, 1919, 625,484,000 bushels of wheat from the farms, or about 674,000 bushels more than moved during the same period in 1918. During same period of 1919, there had also been ground by the mills 314,444,000 bushels of wheat, or 19 per cent more than in

same period in 1918, and according to the estimates of the Wheat Corporation of wheat to be moved, 73 per cent had been moved from the farms. The report pointed out that in December the western roads were greatly hampered in the movement of wheat and corn crops by reason of an unusually early and severe storm of snow, which, together with the unreasonably cold weather, brought about some congestion. The report also pointed out that, considering the wheat crop as a whole, there was about 2 per cent more grown in 1919 than in 1918, but that there was considerably more transportation involved in the movement for the reason that it was grown in States more remote from point of consumption. For instance, Texas produced 240 per cent more wheat in 1919 than in 1918 and Oklahoma produced 160 per cent more in 1919 than in 1918. The report also stated that the total corn crop to be moved by rail will involve approximately 418,000 carloads.

The report reviewed in detail the steps taken to insure conservation of coal by the railroads, and said:

"A conservative estimate places the total savings made for the year 1919 as compared with 1918 at \$45,789,000. This sum is not large when compared with the total fuel bill, which will approximate \$665,000,000. It is nevertheless a gratifying figure when it is considered that the results were accomplished without appreciable additional capital expenditure for the purpose, without radical change in existing equipment and facilities, and that the cost for organization to do this has been small. In other words, this saving is largely the result of effort to secure carefulness in the use of fuel instead of heavy capital investment for improved facilities."

Director Tyler declared that with increasing fuel prices the fuel conservation work is assuming progressively greater importance as time goes on, and that it should by all means be continued.

The report outlined the work done in promoting safety in railroad operation, and said:

"As an example of what can and is being accomplished in this very important matter, it may be mentioned that as a result of the nation-wide campaign, October 18-31, 1919, the percentage of decrease compared with the same period of 1918, was, killed 34.9 per cent, and injured 54.6 per cent. Surely this good work should not be discontinued."

Weekly Traffic Report

ACCORDING TO A REPORT ON traffic conditions for the week ended January 29 made to Director General Hines, revenue freight loaded and freight received from connections for the various regions was as follows:

Eastern region—Revenue freight loaded, 187,365, an increase of 11,924 cars; received from connections, 209,004, an increase of 428 cars. Allegheny region—Revenue freight loaded, 176,842 cars, an increase of 12,500 cars; received from connections, 142,496, a decrease of 48 cars. Pocahontas region—Revenue freight loaded, 30,457 cars, an increase of 894 cars; received from connections, 14,969 cars, a decrease of 584. Southern region—Revenue freight loaded, 126,097 cars, an increase of 19,558; received from connections, 76,766 cars, an increase of 13,059. Northwestern region—Revenue freight loaded, 114,606 cars, an increase of 13,171 cars; received from connections, 70,935 cars, an increase of 1,906 cars. Central Western region—Revenue freight loaded, 118,984 cars, an increase of 20,155 cars; received from connections, 67,335 cars, an increase of 6,619 cars. Southwestern region—Revenue freight loaded, 62,068 cars, an increase of 8,941 cars; received from connections, 54,013 cars, an increase of 9,271 cars.

A summary of the report follows:

Eastern Region.—There has been a considerable falling off

in the movement of freight as compared with the recent heavy increases over last year, due to weather conditions during the past week, with resulting accumulations and necessary embargoes. Conditions, however, are very much improved as compared with the previous week. Passenger movement has been considerably restricted by severe weather and delayed trains, also apparently by the influenza epidemic.

Allegheny Region.—Operating conditions are somewhat improved as a result of more favorable weather. There is, however, an accumulation of eastbound traffic for movement through Chicago and also for movement via New York. Embargoes have been extended to prevent further increase. Continued activity in the iron and steel territory. Reports indicate four additional pig-iron furnaces being put in blast during the week. Travel, both through and local, is normal for this season of the year, being very heavy to Florida and other southern resorts.

Pocahontas Region.—Owing to restrictions on the exportation of coal, tidewater coal dumped showed a substantial decrease. Coal and coke loading also showed a considerable reduction under the previous week. General movement of freight throughout the region was good and weather conditions are favorable, but miscellaneous loading shows some decrease.

Southern Region.—Loading of freight generally was very heavy. Sufficient number of refrigerator cars on hand to protect the perishable movement from Florida. Movement of cotton to the ports was very heavy, showing large increases over corresponding period of last year.

Northwestern Region.—General business conditions continue good and the outlook from the manufacturing viewpoint is very favorable. In spite of high prices the demand for all manufactured articles is greatly in excess of the supply, and all industries have a large number of unfilled orders on hand. Industrial development throughout the region is booming and many reports are received of new industries and additions to existing plants, also of the building of a large number of new homes to take care of increased housing demands. Movement of cars has been interfered with by unfavorable weather conditions and influenza epidemic affecting employees. Passenger traffic shows an increase over last year, but is not as heavy as in preceding weeks, due probably to less local travel. Travel to California continues heavy.

Central Western Region.—Crop conditions in Southern California have been much improved by recent rains. Passenger travel generally continues heavy, but it is anticipated that the California movement will commence to fall off within the next week.

Southwestern Region.—Conditions are unchanged from the last few weeks, a very large volume of traffic being available, but movement is severely restricted by shortage of cars of all kinds. The total loading, however, showed substantial increases over the same week of last year. Regular passenger travel continued very good throughout the week. Business from St. Louis district to Southwest Texas was very heavy. Through travel to and from California via El Paso unusually good.

The Detroit (Mich.) Board of Commerce, through its Transportation Committee, has compiled a list of recommendations for relieving the badly congested railroad terminal facilities of the city. All shippers and receivers of freight are urged to redouble their efforts to promote freight car efficiency. First, by routing cars so that they will arrive in Detroit on the railroad which is to deliver them to the consignee. This will save delay in the terminal. Second, by loading all cars to full visible or carrying capacity. Third, by ordering cars only when actually required. Fourth, by prompt unloading of cars and notice thereof to the carrier.

A Statesman's Reply to the Brotherhood

THE FOLLOWING CORRESPONDENCE has passed between Congressman Pell of New York and the Brotherhood leaders:

JOINT LEGISLATIVE BOARD OF THE STATE OF NEW YORK.

HON. HERBERT C. PELL, JR.,
House of Representatives,
Washington, D. C.

Honorable and Dear Sir:

We, the undersigned representatives of the four train service organizations of the State of New York, at a conference held at Albany, N. Y., on January 21, 1920, after giving full consideration to the various measures now before Congress, with respect to the operation and maintenance of the railroads of the country, desire to record ourselves in favor of the so-called "Two Year Extension Government Control Bill," and in opposition to the so-called "Cummins' bill" and "Esch bill," and do hereby respectfully direct your consideration to the provisions of the two year extension bill, and in opposition to the two bills named.

Very truly yours,
W. C. WISH,
Brotherhood of Locomotive Engineers.
THOMAS E. RYAN,
Brotherhood of Locomotive Firemen and Enginemen.
JOHN E. GRAY,
Order of Railway Conductors.
JOHN FITZGIBBONS,
Brotherhood of Railroad Trainmen.

HOUSE OF REPRESENTATIVES,
WASHINGTON, D. C., January 26, 1920.

MR. JOHN E. GRAY,
1303 Second street,
Rensselaer, N. Y.

Dear Mr. Gray:

I have received your letter containing the resolution of the four railroad brotherhoods advocating the extension of government control for two years.

I feel that ordinary honesty demands a categorical answer. I do not feel that there is any probability of the successful continuation of government ownership. During the stress of war when every patriotic man was doing his best work, especially when employed by the government, the efficiency of railroad operation fell off very considerably, and I do not believe that when the government service loses the glamor of being a war activity there will be any reason to expect an increase of efficiency. If the government took over the railroads it would create a mass of political placemen, which could very readily control elections throughout the country, and would, I fear, subject us to a bureaucracy; also, you would have the extensions of railroads controlled by considerations of politics.

The whole discussion of the railroads today must be based on one hypothesis, that the railroads must run. The question is a perfectly practical one of how best they can be made permanently to give adequate service to the public.

It is not for us to approach this question as devotees of one economic dogma or another, or as the advocates of one or another class of the community. The only matter really under discussion is method. We have the suggestion of government ownership. That, of course, would preclude a great many evils, mainly in financing, that have characterized the railroads in the past, and that may very well, if unregulated, characterize them in the future. I myself, however, am very strongly opposed to government ownership. In the first place, under private management you get a much easier adjustment to changing conditions and much greater flexibility, which is necessary in every business in the world, but especially in one like the railroads, where we have to consider seasons, business conditions, and manufacturing conditions, and where more complex questions have to be answered than in other enterprises. All these things can be met much more easily under private control. Anybody who has dealt with the government can see that.

Almost all the objections that have been made to private ownership in the past have been based on errors of finance, not on errors of administration. Obviously you cannot treat a great railroad system as you would a corner grocer, and simply say

that it can do what it will with its own. There are too many interests involved. A man in the position of the manager of a large railroad is more or less in the position of a trustee, and he must be treated accordingly. A proper regulation of the financing of railroads is a perfectly practical thing to have, without having governmental administration of the road itself. The elementary principles of law and justice can be applied properly to financing a road, but there are no such clear rules that will apply to running it. For that reason, among others, I am very much in favor of private ownership.

Suppose the government takes over all the roads. I think I am right in saying that there are about two million men directly or indirectly employed by the railroads. That raises immediately the question of promotion. We start off with a staff, but some men will go out. Others have to be promoted to take their places. If you advance your men by seniority, that simply means automatically firing your good men. If a man merely works up by the length of time he has served, obviously the more capable man would be able to rise more rapidly elsewhere. So you will develop a rather incompetent bureaucracy. If, on the other hand, you try to make any system of selection, you are bound to get a political machine. The men will owe their positions to the party in power, and to that party will be their first allegiance rather than the general public. It is an unfortunate condition, but it is a fact. In either case you will get absolutely incompetent service.

Under government ownership unquestionably you would have a certain amount of sectionalism, of which about 90 per cent would be absolutely honest. I do not mean that under a Republican administration there would not be an inch of road built south of the Mason and Dixon line, or that the Democrats would not allow a spur track to go up in New England, but there will be a tendency for each man to serve his own district. That is only natural. For example, I understand the railroad needs of my district quite well. I would try to meet them because I understand them. I do not understand the conditions in other parts of the country so well, and they do not appear to me as important. In the same way you would give twenty dollars to help out some unfortunate man among your employees who had broken his leg, and you would not think anything about it, but you feel a great glow of magnificent charity if you give five dollars to help the starving people in East India. The thing is distant.

Now the dominant party will of necessity serve those districts from which it comes. In that way you will not get a road constructed primarily to serve the public as you will under private ownership. Remember that a railroad will only make money if it serves the public, and money will not come in unless the public wants to use the road. You cannot compel a man to go on the Pennsylvania Railroad. He travels on the Pennsylvania because he finds it a useful road. He does not go on the R. O. & T., because he does not have to, and because it is useless to him. One road is of service to the community, and the other is not. A road takes in money only in proportion to its value to the community. In a privately run road where profits is the primary incentive, real, genuine and immediate public service will be a necessary concomitant to its successful management.

There is one other phase which I should like to consider. That is the question of great improvements. We have in New York City the Pennsylvania Terminal, an extraordinarily expensive building, built in the time of Mr. Cassatt at great expense to serve the Pennsylvania road for a long time ahead. Another case is on the Lackawanna, where an enormous expense was incurred in straightening out a part of the road a couple of miles long. Such things, while undoubtedly profitable in the end, do not pay for themselves immediately. With our system of elections every two years, it will be impossible for any administration to burden itself with improvements of this sort, because each succeeding railroad administrator will have to show a record of low rates. The man who looks ahead will have a bad record and the public will not think of the future.

Government ownership will certainly bring politics into the administration of railroads. It will certainly result in the management either being a bureaucracy or a political machine. It will result in sectionalism in the expansion of the roads. These three things seem to be insuperable objections to government ownership, and for these reasons I shall not vote for the extension of government ownership. I am,

Yours very sincerely,
HERBERT C. PELL, JR.

The Bryan Solution for the Railroad Problem

Representative Everett Sanders Takes the Nebraska Politician to Task in Humorous Speech

IN VIEW of the large amount of publicity that has been given recently to William Jennings Bryan and his advocacy of government ownership of railroads, which has even led to some talk about a combination between Bryan and Plumb, Representative Everett Sanders of Indiana thinks that there ought to be some publicity given to the actual details of Mr. Bryan's scheme for handling the railroads. In a brief speech in the House on January 27 Mr. Sanders afforded some amusement by resurrecting some of Mr. Bryan's views as given to the House committee during its railroad hearings last summer. The following are some extracts from the Congressional Record report:

Mr. Sanders of Indiana: Mr. Chairman, I want to speak briefly on the railroad question, dealing particularly with the "Bryan plan" for solving the railroad problem. The "Plumb plan" has had its day in court, but the "Bryan plan" has been sorely neglected. It has escaped the notice of the country generally that on August 29, 1919, William Jennings Bryan, appearing before the Interstate and Foreign Committee, announced his platform.

Now, when the man who said "Coo" to one Democratic national convention and thereby defeated all other aspirants and nominated himself for the presidency and who said "Boo" to another Democratic national convention and thereby defeated one of the greatest Democratic statesmen of the last quarter of a century and nominated a man who almost fastened international socialism upon his country, it is high time the country knew about his paramount issue.

To those who believe that young men dream dreams and old men see visions, I respectfully recommend a careful reading of Bryan's remarkably visionary testimony before our committee. But first, to prove that the presentation was meant to be in the nature of a platform, I read from his testimony. Said Mr. Bryan:

"My plan is only presented for consideration that it may be kept in mind when the people decide these questions." (Hearings, vol. 2, p. 1695.)

When we consider this frank statement that his real forum was to be the political campaign the essentials of his plan become an interesting study, for they are so formed as to make a bid for votes in every direction and are as refreshingly impracticable and charmingly visionary as any of his previous paramount issues. But let us see the plan in his own words:

"I beg to propose as alternative what may be described as a dual plan, which contemplates the ownership and operation of a federal trunk-line system, sufficient to reach into every state and make each state independent by giving it an outlet for all it has to sell and an inlet for all it has to purchase, and the ownership and operation of all the other lines by the states in which the lines are situated. * * * (Hearings, vol. 2, p. 1684.)

"* * * Now, the dual plan adapts itself not only to our form of government, but to our conditions in this country. A trunk line, only sufficient to reach into every state and furnish each state an outlet, and thus make it independent, instead of costing eighteen or twenty billions of dollars, would not cost, I should say, over four or five billions. The plan does not contemplate the nationalization of every railroad that runs through two or more states. It contemplates a bare, skeleton government trunk line that will give to every state a position of independence, and thus enable it to treat without coercion or compulsion with the states adjoining. Because a railroad runs through a number of states is no reason why it should be regarded as a trunk line and owned by the federal government. The fact that it runs through several states would not interfere

at all with operation by each state on the part of the line that is within the state. * * * (Hearings, vol. 2, pp. 1688-1689.)

"* * * This plan not only lessens the amount that will be necessary to inaugurate, so far as the national part is concerned, but it has another advantage, namely, that it distributes the question over time as well as over space. It divides a great problem now confronting the people into 49 problems—1 for federal government, and 1 for each of the 48 states—and it permits the settlement of the question as the people of each state are ready to settle it. If a state does not desire to take over and operate the lines within its borders immediately, it can, if it wishes, leave them in private hands until the sentiment of the people of the state is ready for government ownership." (Hearings, vol. 2, p. 1689.)

[Laughter.]

He candidly admits that it is experimental and that it may take years to get it to working. Witness this:

"If a state does not desire to immediately enter upon the state ownership and operation of the railroads within its borders, it can leave these railroads in private hands until the sentiment of the state is ready.

"Not only that, but the plan gives us an opportunity to test out the system. A great many people might hesitate to try a new policy on so large a scale; they would say, 'If it does not succeed, we will have spent an enormous amount of money, and we will find it difficult to return to the old system,' but if you distribute this question over a number of years the states that wait will have the benefit of the experience of the states that try, and if the theory upon which the change is made proves to be unsound in practice, it can be stopped, and a return can be made with less loss and with less derangement of business." (Hearings, vol. 2, p. 1690.)

[Laughter.]

This quoted testimony also shows that he intends to take the railroad companies by the nape of the neck and make them take back the roads in case state ownership does not prove a success. Besides, he coddled himself into the sublimest calm by pondering in his dreams over the happy thought that the states that wait could watch the floundering of the states that just jumped right in and possibly keep out of the whirlpool. Let me repeat his language:

"If you distribute this question over a number of years, the states that wait will have the benefit of the experience of the states that try, and if the theory upon which the change is made proves to be unsound in practice it can be stopped and a return can be made with less loss and with less derangement of business." (Hearings, vol. 2, p. 1690.)

[Laughter.]

Experiments seem to be his particular delight, and the multiplicity of experiments possible under his plan seems to have about the same effect upon him as the needle did on the famous character of Sherlock Holmes. I read further from his testimony:

"A trunk line only sufficient to reach into every state * * * would not cost, I should say, over four or five billion dollars. (Hearings, p. 1188.) But, gentlemen of the committee, the plan that I suggest to you has this advantage, namely, that if there is any doubt in the minds of those who are willing to try government ownership, it gives a chance to try it without investing as much as would be necessary to buy all the railroads. Further, I beg to suggest that if you have 48 states, each one with its system of transportation owned and operated by the state government, you have 48 experimental stations." Hearings, pp. 1690-91.)

He admits on examination that what we really need is a practical solution. But the mere fact that we would first

have to pass the bill by the House and Senate, then amend a few state constitutions, educate the people in favor of it, get 48 state legislatures to act favorably thereon, and have endless and hopeless confusion during the interim does not disturb the sweetness of his dreams. [Laughter.]

Listen to the following:

"Mr. Sanders of Indiana. Of course, with the railroad problem before us now, what we want is a practical solution.

"Mr. Bryan. Yes.

"Mr. Sanders of Indiana. Your proposed solution would require, first, the adoption of it by Congress. We could, of course, issue no edict to the states. It would require the adoption by each of the states of the same plan?

"Mr. Bryan. Yes, sir.

"Mr. Sanders of Indiana. A great many of the states would have to change their constitutions. Some of the states might not adopt the plan at all. This is quite conceivable, is it not?

"Mr. Bryan. No; it is not conceivable, if you will pardon me. That is, when a plan is tried it is either demonstrated to be a success or a failure. If it is demonstrated to be a success, it is only fair to assume it will be adopted.

"Mr. Sanders of Indiana. Of course, the plan will not be in its entirety until it is adopted by all the states. So the plan, as a plan, can not be tested until it is adopted by all the states, and hence its success or failure could not influence any of the states to come in.

"Mr. Bryan. Oh, I beg your pardon. The failure of one state to adopt it will not interfere with the other states adopting it at all.

"Mr. Sanders of Indiana. Well, suppose Illinois does adopt the plan and suppose Indiana and Wisconsin do not. Now, would Illinois have the right to condemn the Pennsylvania Railroad at the state line, coming across there, and take it over?

"Mr. Bryan. No; not the interstate line.

"Mr. Sanders of Indiana. Well, you already have the national—

"Mr. Bryan (interposing). I thought you meant the government line. It could condemn any part of any other line; it can today. If the Pennsylvania can condemn the individual's property, do you doubt the state that gave it that right can go out and condemn the railroad?

"Mr. Sanders of Indiana. It is your opinion that the state of Illinois could condemn a part of an interstate railroad and control it? Well, that would dismember the road for interstate purposes.

"Mr. Bryan. Not at all.

"Mr. Sanders of Indiana. How would it operate.

"Mr. Bryan. The board that had control of the roads in Illinois would act in conjunction with the board that had control in Indiana, if it was a government road, or, if a privately owned road, with the manager, and they would arrange for their joint operations. You would have to assume that a road would not look out for its own interests in order to take any other position.

"Mr. Sanders of Indiana. Would you prevent any railroad company from engaging in interstate commerce?

"Mr. Bryan. No; and I think you can safely leave that matter to the United States. The federal government will really set the price and terms of interstate commerce.

"Mr. Sanders of Indiana. What would be your estimate of the number of years that it would take to put that plan into effect?

"Mr. Bryan. I would not attempt to guess, because it would be merely a guess, and my experience has led me to be a little cautious about fixing a time. It is easier to tell the direction of the wind than to measure its velocity; it is easier to tell the trend of events than it is to tell how soon a thing will be accomplished.

"Mr. Sanders of Indiana. Would you release any of the federal control after that plan had been adopted, or would you continue federal control until it had been completely adopted?

"Mr. Bryan. I think that would have to be determined by the conditions as they arose. There is this general proposition that I have always gone on, namely, that the people will have as much sense tomorrow as they have today, and probably more light. Therefore, you can safely leave until tomorrow the decision of questions that cannot be decided today.

"Mr. Sanders of Indiana. But in formulating a plan we have to decide on something, and I was wondering whether in your

plan it was your purpose to continue federal control until all the states had adopted your plan, or whether it was your purpose that when Illinois, say, had adopted the plan federal control would be withdrawn.

"Mr. Bryan. If the federal government's trunk line reached out into every state its control over interstate commerce would, I think, be more effective than under any commission or board.

"Mr. Sanders of Indiana. Then, would you release federal control?

"Mr. Bryan. It might be possible to release it; but I do not think it is necessary to decide that question until we reach it." (Hearings, vol. 2, pp. 1706-1707.)

Mr. Sanders of Indiana: I understood that Bryan and Plumb were going to join hands, and I wanted the country to know the Bryan plan so the people would know the result of the combination.

Mr. Longworth: Does Mr. Bryan suggest a method of financing this scheme?

Mr. Sanders of Indiana: That does not bother him in the least.

Mr. Longworth: That is negligible, is it not?

Mr. Sanders of Indiana: Yes.

Mr. Longworth: The furnishing of this \$5,000,000 is a negligible proposition?

Mr. Sanders of Indiana: Yes. That is a feature the people can decide. Notice that he gives national control of some trunk lines. That, he thinks, will catch those favoring nationalization. He proposes state control of many lines to please those who favor states rights. He permits private control if they do not like the experiment, thus appealing to those believing in private control. He uses great care not to offend the Plumb Plan League, and gives the following clear-cut statement on that plan:

"Mr. Denison. You may have expressed your views before I came into the room in reference to the question that I am going to ask, and if you did you need not repeat them. I wanted to ask you whether or not you think that the so-called Sims plan, or the Plumb plan, as embodied in the Sims bill, would be a good thing for this country?

"Mr. Bryan. I have not felt that one could safely answer that question "yes" or "no," because if one makes an answer "yes" or "no" to that the statement is apt to go out without qualification, and he is put in a position that is not his true position. I would not want to answer whether the plan is good or bad, because it might seem like an indorsement of it or a condemnation of it. I have pointed out two or three things that I thought were good, and I have pointed out some things that I thought were bad, simply in conjunction with the discussion." (Hearings, vol. 2, p. 1704.)

I hope no member here but entertains a high personal opinion of the great commoner, and to be sure that I shall leave you all feeling kindly toward him I will read you the following tribute he paid you:

"But while we could reduce the rates in the state we could not do it in Congress as well as we could in the state. I do not think we ever can, on the theory that the farther a Congressman gets away from home the more difficult it is to watch him, and therefore the more difficult it is to make him serve the public." (Hearings, vol. 2, p. 1697.)

[Laughter.]

With the greatest domestic problem of a century before this great legislative body, upon the proper solution of which depends the happiness of all our people, we ought all to have a prayer of thanks upon our lips that the country has been spared the disaster of the "Bryan plan." [Applause.]

The Ohio legislature has passed and sent to the governor for approval a bill permitting railways to make passenger fares three cents a mile. The law is to go into effect in May, and it would appear that if federal control of the railways is terminated on March 1 the roads will be subject, in the intervening time between that and May, to the law limiting intrastate fares to two cents a mile.

Annual Report of the Division of Traffic

Freight Rate Structure Readjusted to Meet Peace Conditions —Passenger Service More Normal

THE STRIKING INCREASE in passenger travel during the last two years which has been largely responsible for the difficulty of supplying sufficient passenger equipment was indicated in the annual report of Edward Chambers, director of the Division of Traffic of the Railroad Administration, to Walker D. Hines, Director General of Railroads, for the year 1919, today. Mr. Chambers showed that a total of approximately 46,202,827,365 passenger miles was handled in 1919, or an increase of 17.3 per cent over 1917 and an increase of 33.6 per cent over 1916.

"With constantly increasing volume of passenger business and little hope of early additions to passenger train equipment," said Mr. Chambers, "it is important from the viewpoint of public convenience that there be no abandonment of the present plans for the conservation of service."

Director Chambers pointed out that as soon as possible after the ending of the war former train service has been restored to such extent as seemed justified by the public need without, however, the reinstatement of expensive duplicate service and without distributing the arrangements instituted during the early months of the Railroad Administration under which the arriving and leaving time of trains of the different railroads between common points was adjusted to serve best the public convenience. He added that certain train schedules have been shortened to permit of faster service between the larger commercial centers, some of the limited trains have been restored to their former schedules, a number of observation cars have been put back into service, and new sleeping car lines have been inaugurated. He pointed out that the train service added in the western part of the United States alone in excess of train mileage canceled during the war was represented by 9,216,206 additional train miles per year. This being necessitated by tourist travel, development of commerce generally, and especially the new oil developments in the Southwest. Mr. Chambers also pointed out that a consistent effort has been made to effect desirable and convenient connections between passenger trains at interior junctions, and a competitive campaign has been conducted with very successful results, having for its object an increase in the number of trains on time.

Mr. Chambers pointed out that it was impossible to make many of these changes to bring about better service to the public until well along in 1919, because of the very heavy soldier travel due to the return of the Army from France, which continued until well along into the summer.

Consolidated ticket offices have now been established in 108 centers, according to Mr. Chambers. "These offices receive seemingly the universal commendation of the public." He said that the saving in rental alone resulting from these consolidations amounts approximately to \$1,846,976 annually, and the saving in salaries and miscellaneous expenses amounts to even more, in spite of the material increase in wages granted to the employees. He added that should the consolidated offices continue throughout 1920 there would be a still further reduction in the cost of operation.

Among other improvements in service mentioned by Mr. Chambers was the bettering of meals on dining cars, unification of terminal facilities, uniformity in service and prices for meals at railroad stations, standard table d'hôte meal checks, standard size menu cards and also uniform prices for tonorial and clothes-pressing service. He also pointed out that baggage equipment has been pooled so as to reduce to a minimum the congestion of baggage and the incidental de-

lays resulting therefrom. Further progress has also been made in the matter of simplification of time tables, folders, etc., and provisions have been made for the issuing of additional consolidated time tables showing the schedules by different railroads between common points, thus adding materially to the convenience of the public. The travel bureaus have been created, with headquarters in New York, Chicago and Atlanta, for the accommodation of the public and the dissemination of information. As a result, reports from the Interior Department show that during the summer of 1919 the national parks enjoyed the greatest patronage in their history.

Director Chambers pointed out many simplifications which have been brought about under unified control in the preparation and publication of tariffs, the handling of rate questions, routing of freight, etc.

Newly developed traffic on the railroads of the country has made necessary the establishment of more new commodity freight rates during the reconstruction period following the war than have been established at any other time in the history of the lines, according to the report.

"The conditions during the reconstruction period," the report said, "have made it necessary to establish more new commodity rates to move newly developed traffic than at any other time in railroad history."

The report summarized the work as follows:

"During 1918 our main efforts were directed to assist in winning the war by furnishing the required service and enabling the movement of war traffic to be as free as possible, regardless of commercial conditions. Our plans were changed soon after the signing of the armistice, and early in 1919 we began to devote our energy to assist in the prompt restoration of normal commercial conditions and revise the rate structures where it could be done consistently and with advantage, but bearing in mind the cost of the service. Many maladjustments have been eliminated, former differentials have been restored where practicable, and the rate structures of the carriers put in much better condition than before federal control by the consolidation of individual tariff issued and cancellation of obsolete rates. Many new industries have developed during the year, and their rate requirements as to inbound rates on raw materials and outbound rates on commodities were provided."

Outlining the principal rate adjustments made by the division during the year, the report said:

"While the work of the Division of Traffic in the adjustment of freight rates, classifications, charges and rules governing the transportation of traffic has continued to consist largely of a revision of the increased rates, etc., established by General Order No. 28 for the purpose of restoring relationships, removing the minor discriminations and otherwise bringing about the better adjustment without material advance or reduction in the level of the rates, there have been a number of important adjustments made, of which the following may be mentioned:

"In the Middle West and Southwestern territory there has been published a revision of the rates on grain to the primary markets and to the gulf ports for export, which has the effect of restoring former relationships and practically all cases bringing about an equalization through the several primary markets, and this readjustment met with practically the unanimous support of the grain dealers of the territory.

"A similar adjustment of the grain rates in the North-

western territory was proposed, but having met with objection from some of the shipping interests involved, the matter was referred to the Interstate Commerce Commission for its advice.

"The freight rates on all classes and commodities between points south of the Ohio and east of the Mississippi river on the one hand and points west of the Rocky mountains on the other hand, have been published on an equality with the rates between the Pacific coast territory and the Eastern states north of the Ohio river. This adjustment made a considerable reduction in most of the rates involved and has had the effect of placing the manufactured products of the South on a parity with those of the Northern and Eastern states in the Pacific coast markets and of making lower rates into the South on Pacific coast products.

"Many reductions have been made in the rates on potash from various western producing points where the production of potash was stimulated by the need of this material for munitions during 1918, and where it was found necessary to reduce the freight rates to enable these American producers to continue their operations and supply potash for its ordinary use as fertilizer material in competition with that imported from foreign countries.

"In 1919 the federal government and practically all of the states renewed their road-building programs and appropriated large additional sums for this work. To aid in this work the Railroad Administration authorized a reduction of 10 cents per ton on road-building materials, consisting of sand, gravel and crushed stone, when consigned to and the freight charges paid by the various branches of the government.

"Complaint having been made by shippers in adjoining states that the classification and rates within Illinois constituted a discrimination against the adjacent sections, a revision of the Illinois rates and classification was undertaken through the administration's freight traffic committees, but on account of the many objections received to the rates proposed by the committees it was concluded to ask the Interstate Commerce Commission to investigate the matter and give its advice and recommendation, and this procedure was followed."

Setting forth that the restoration of more nearly normal commercial conditions, the increase in American ships in the foreign trade, and the congestion of freight at port demonstrated the need for equalizing the rate bases to and from certain territories and ports, the report listed the following changes in export and import rates:

The revision of both import and export rates via Pacific coast ports, more nearly to equalize the shipping routes via the Atlantic and gulf ports.

The publication of revised export rates from points in central territory to the South Atlantic and gulf ports to relieve the congested North Atlantic ports.

The revision of rules covering port and handling charges on the Pacific coast under which steamship lines assume liability for demurrage charges resulting from their failure to take the goods when delivered in time for scheduled sailings.

The resumption of the issue of export bills of lading via Atlantic ports and on understanding with the steamship lines sailing from the North Atlantic ports that they will assume demurrage charges due to their delays on shipments delivered by the rail carriers in time for scheduled sailings, in connection with which the free time has been extended to 15 days.

The report outlined the efforts of the division to consolidate tariff issues and said:

"In the Eastern region, for example, during this year 471 tariffs, totaling 31,266 pages, were replaced by 10 consolidated issues covering 3,175 pages and the printing costs reduced from \$318,208 to \$89,537. The shippers and car-

riers were supplied with the same information as before at one-third the cost.

"Consolidated Freight Classification No. 1, which has now been published and filed with the Interstate Commerce Commission and with state commissions, to become effective on December 30, 1919, is in substantial accord with the recommendations of the commission and represents very material progress toward uniform classification. The uniformity in rules, descriptions, package provisions and minimum weights will do away with much of the trouble heretofore experienced by both carriers and shippers in the handling of traffic from one classification territory to another."

The report set forth that joint rail and water rates have been generally established during the year, with differentials against all-rail routes between the same points.

The "sailing-day" plan established during the war has been modified to allow necessary latitude to shippers in routing their shipments, the report said. This eliminated one of the greatest means of securing heavy loading of merchandise cars, but efforts to improve loading have continued.

Reports from 71 large loading points show an increase from 14,799 to 15,037 pounds per car over the same period last year," the report continued. "An active campaign has been waged by the operating and traffic departments to secure heavier loading of carload shipments, and this has met with considerable success, although the loading is not as heavy as in 1918."

Revision of passenger fares under the federal order making 3 cents per mile the basic passenger rate is practically completed, the report said.

"All local division tariffs," it continued, "as well as many joint interline tariffs have already been reissued and are now in effect. It is anticipated that the remainder of the joint interline tariffs upon which work is now in progress will be completed and made effective at an early date, and when this has been done the entire passenger rate fabric of the country will have been revised on a basic rate of 3 cents per mile, except where a higher basis was in effect prior to federal control.

"In the issuance of permanent tariffs uniformity and standardization have been accomplished with respect to fares, routes, forms of tariffs, rules, regulations and practices, enabling a more ready inspection on the part of the public and facilitating the handling of traffic by ticket agents."

The report reviewed the efforts of the division to establish unified rules for handling perishable freight and live stock and set forth the steps taken to expedite the handling of claims, which have rapidly increased in number.

The character of express traffic changed materially during the year, the report said.

"During 1918," it continued, "large amounts of war material were sent by express, but this was replaced in 1919 by a large volume of fruits, vegetables and merchandise. High prices have warranted many perishable shipments by express which ordinarily moved by freight. The high cost of merchandise has led merchants to carry smaller stocks and to turn them quickly, resulting in a greater use of express transportation. Something over a million pieces of express matter, weighing approximately 40 lb. each, are handled each day. The business on the whole has been handled with dispatch. Ordinary box cars were fitted for passenger train service and used in emergencies to accomplish this result."

The report reviewed the aid given the farmers of the country by the agricultural representatives of the railroads co-operating with the agents of the Department of Agriculture and described the farm-improvement work in various parts of the country.

Director Chambers called particular attention to the organization set up for handling rate questions, mentioning specifically the fact that the shipping public has been given equal

representation with the railroads on the various freight traffic committees which pass locally on suggestions for rate changes and outlining this procedure as follows:

"The freight traffic committees, established in 1918 and composed of both railroad traffic officers and representatives of the shipping public, have been continued during 1919, with the addition of district committees at Omaha, Neb., and Salt Lake City, Utah.

"The membership of all these freight traffic committees was increased to include as many representatives of the shipping public as there were railroad traffic men on each.

"These committees have been engaged chiefly with the completion of the revision of freight rates, charges, etc., as increased under General Order No. 28, with applications from the shipping public for the publication of rates to meet new conditions, and with the removal of discrimination where it was shown in existing rates.

"All subjects of interest to the shipping public were docketed and made the subject of hearings, at which time all interested were given an opportunity to present their views.

"In order to expedite the handling of applications made by the district freight traffic committees the practice was established during the year of having those committees send direct to Washington applications covering traffic between points within a district, and this has considerably reduced the amount of work which it had been necessary for the general committees to handle and has enabled them to dispose of practically all subjects which were brought before them during the year."

Orders of the Regional Directors

GASOLINE FIRES.—Circular 263 of the Southwestern regional director cites a gasoline fire which resulted in a loss of \$8,620, due to the negligence of a car repairer who worked on a leaky tank car with an open flame lantern, in violation of all regulations. The bulletin emphasizes the importance of observing all rules governing the transportation of explosives and other dangerous articles.

Permit System for Grain Shipments.—Supplement 7, canceling Supplements 1 to 6, inclusive, of Circular 247 of the Southwestern regional director, referring to the permit system on shipments of grain to primary markets says: Individual permits are required on all grain shipments from country points destined to or via North Atlantic ports mentioned on page 5 of Circular No. 247; Individual permits are required on all grain shipments moving from one primary market to another primary market; no permits whatever are required on grain shipments from country points to primary markets nor from country points or primary markets when destined to Pacific or Gulf ports, either domestic or for export.

Shipping Day Plan.—By circular No. 264 the Southwestern regional director orders the dissolution of the regional committee appointed for the purpose of developing the concentration of merchandise loading and the sailing day plan. The committee's files have been referred to the American Railroad Association and it is suggested that, if this association should take up any question with respect to the package freight problem prior to the termination of federal control, the railroads should extend full co-operation.

The Southern Pacific has engaged quarters for a freight office in Boston, 12 Milk street, the same place occupied by the company before the railroads were taken over by the government. J. H. Glynn, the former agent, is again in charge. The office is already open, but will not sell tickets or route freight before March 1.

Report on Vincent Derailment

THE INTERSTATE COMMERCE COMMISSION has issued a report, dated December 5, and signed by W. P. Borland, chief of the Bureau of Safety, on the derailment of east-bound passenger train No. 50 on the Southern Pacific, near Vincent, Cal., on October 29, when two employees, two trespassers and one passenger were killed and a large number of persons were injured.

As reported in the *Railway Age* of November 28, in the monthly accident record for October, this derailment was due to excessive speed on a curve of 8 deg. 10 min., over a descending grade of 2.2 per cent. The engineman and fireman were killed.

The government inspector examined the trainmen and all persons having knowledge of the movement of the train, and finds no fault in the brake system or its management, or in the condition of the track; but concludes that the super-elevation of the outer rail was not sufficient for the speed at which the train was running. This elevation is from 4 in. to 4½ in., and the rule allows passenger trains to run over the curve at 40 miles an hour. All of the trainmen and other witnesses estimated the speed of this train at about 35 miles an hour, except an employee of the road connected with the commissary department, riding on the train, who had noticed while on the tangent approaching the curve that the speed was unusually high, and who believes that it was as much as 40 or 45 miles an hour; he began to get frightened.

He was expecting an application of the brakes to be made, but the speed continued to increase and in a few seconds he felt a sudden jar like an emergency application of the brakes—which was the derailment. In its conclusion the report says:

"It is believed that the track conditions existing at this point did not afford an adequate margin of safety for a speed of 40 miles an hour. The elevation was insufficient for the maximum rate of speed permitted. According to the recommended practice of the American Railway Engineering Association, the theoretical elevation of the outer rail on an 8° 10' curve, if trains are to be operated over it at a speed of 40 miles an hour, should be slightly over 8½ inches; with an elevation of 4 inches, the maximum speed allowed should be only slightly over 27 miles an hour. While it is true that the overturning speed of a train on a curve of the degree and elevation here under consideration is much greater than 27 miles an hour, nevertheless overturning speeds are entirely matters of calculation and theory, whereas the speeds shown as safe speeds are more or less matters of common knowledge based on practical experience. A very large margin must necessarily be maintained between theoretical overturning speeds and the speeds authorized for common practice, in order that proper allowance may be made for errors in estimating speed, worn rails, and slight imperfections in track or equipment which may not be serious enough to warrant repair or replacement, but which, combined, materially reduce the factor of safety. The elevation recommended for common practice is designed to provide the necessary margin of safety and no speed should be permitted which is greater than that recommended for the existing elevation and curvature. If it is not desired to increase the elevation on account of heavy grades or for other reasons, or if the required elevation is beyond the dictates of good practice, then the obvious remedy is to reduce the maximum permissible speed accordingly.

"This accident was caused by excessive speed. It is believed that had the speed of trains on this curve been restricted in accordance with the recommended practice of the American Railway Engineering Association for the existing elevation, this accident would not have occurred."

Railroad Bill Nearly Ready

FOLLOWING THE ANNOUNCEMENT on February 4 that the conference committee had reached an agreement on the most important features of the bill for the regulation of the railroads after their return to private management, the committee has been busy with the actual drafting of the compromise bill with the expectation that the conference report would be ready for submission to the House and Senate before the end of the week. The actual drafting of the language of the provisions agreed upon by the committee was left mainly to Senator Cummins and Representative Esch, chairman of the House committee, who have been assisted by experts from the legislative drafting bureau and also by the legislative committee of the Interstate Commerce Commission. They were to report their work to the full conference committee for its approval.

One of the principal points left unsettled when the agreement was announced last week was as to the exact period during which the $5\frac{1}{2}$ per cent standard of net operating income should be fixed by law. It is understood that two years from the date of the passage of the act has now been determined upon. There were also many important variations in the text of the two bills which had been agreed upon in principle but as to which the exact language used is of importance. Chief among these provisions as to which the final details had not been announced before the filing of the conference report were those relating to the funding for 10 years of the indebtedness of the railroads to the government, the six months' guaranty of the present standard return and the constitution and powers of the wage boards. The Cummins bill was more liberal to the roads in its funding provisions than the Esch bill, which required the deduction of a large part of the sum owed to the railroad companies for current rental from the total owed by the companies for capital expenditures. Also the Esch bill provided a guarantee based on the income for the corresponding months of the test period, while the Senate bill allowed half of a year's guarantee.

Arrangements have been made for the early consideration of the bill in Congress, although the fact that a longer time was required than had been expected to whip the details of the bill into shape prevented its being reported to the Senate before that body took up the Peace Treaty on Monday. It is confidently predicted by the conferees and by party leaders in the Senate and the House that the bill can be passed before the railroads are relinquished on March 1 but there is a chance that opposition in the House may cause more delay than is counted upon.

Representatives Sims and Barkley have announced that they would not sign the conference report and are expected to lead the fight in the House against the rate-making and temporary guaranty provisions of the bill, in an effort to force it back to conference for the elimination of those sections. It is believed that they will find considerable support for this opposition on the Democratic side but that they will not attempt to make a party issue of the question, as reported, because on a straight party vote the Republicans have a strong majority and because they expect to secure some Republican votes against these provisions. The bill will be taken up first in the House, probably on Monday, and later in the Senate. House Republican leaders predict it will be passed during the week.

Thomas DeWitt Cuyler, chairman of the Association of Railway Executives, authorized the following statement regarding the position of the executives:

"It must be a source of gratification to all those interested in the welfare of the railroads in this country that the conferees have arrived at an agreement to report a bill which, it is hoped, will be protective both to the security holders and the share holders of the properties, and to the public at large.

"There can be no question that the conferees and the two committees of the House and Senate have had an earnest desire to do justice to the railroads. If the bill be enacted by Congress the railway executives and the owners of the properties will accept the bill in good faith with the earnest hope that it may be productive of the desired result, namely the protection of the present credit of the roads, and the extension of that credit so that they may provide in the future adequate facilities for the transportation system of the country. It cannot be too strongly emphasized that this question does not affect alone, nor even principally, the owners of these properties. The public is much more concerned. If the transportation system of the country is not adequate to its needs, the country must suffer.

"It is, therefore, earnestly hoped that the protection of the credit the proposed bill seeks to establish will prove successful. If it does not, the railroads will confidently look to Congress for such additional legislation as may be necessary to further protect the companies and the public."

On the basis of the 1919 showing as to earnings and expenses, and taking the property investment as the value, the percentage standard of the Cummins bill would require an increase in net operating income of about \$625,000,000 to produce a return of 6 per cent and \$530,000,000 to produce $5\frac{1}{2}$ per cent. The property investment as reported by the Interstate Commerce Commission as of December 31, 1918, was \$19,005,065,000. Five and one-half per cent on this would be \$1,045,000,000 and 6 per cent would be \$1,140,000,000. The latter figure would be \$625,000,000 more than the net operating income for 1919, which was about \$515,000,000. This would be about 17 per cent of the freight revenues. Six per cent would also represent an increase of \$200,000,000 over the present guaranteed standard return of about \$940,000,000, but it would represent an increase of only \$40,000,000 over the net operating income of the roads in the calendar year 1916, which was \$1,100,000,000. That represented a return of 6.17 per cent upon the property investment for that year. In only one other year has the return exceeded $5\frac{1}{2}$ per cent. In 1910 it was 5.68, but for the investment of that year only \$826,466,000 was required to produce that result. In 1918 the return actually earned by the railroads was only 3.83 per cent and for 1919 it is estimated at about 2.75 per cent.

To the extent that railroads would contribute to the general railroad contingent fund half of their earnings over 6 per cent, the amount actually available to the companies would be reduced from the figures given.

The property investment and the railway operating income as stated by the Interstate Commerce Commission in its annual report for the years 1908 to 1918, excluding switching and terminal companies, with the addition of estimated figures for 1919, is shown in the following table:

Year ended—	Investment	Railway operating income	Return on investment Per cent
June 30, 1908.....	\$13,213,766,540	\$645,680,235	4.89
1909.....	13,609,183,515	732,642,083	5.38
1910.....	14,557,816,099	826,466,756	5.68
1911.....	15,612,378,845	768,213,345	4.92
1912.....	16,004,744,966	751,266,806	4.69
1913.....	16,538,603,109	831,343,282	5.01
1914.....	17,153,785,568	705,883,489	4.12
1915.....	17,441,420,382	727,546,101	4.17
1916.....	17,689,425,438	1,043,017,290	5.90
Dec. 31, 1916.....	17,842,776,668	1,100,545,422	6.17
1917.....	18,574,297,873	986,819,181	5.31
1918.....	19,005,065,288	728,376,209	3.83
1919.....		515,000,000	2.75

A motor transportation engineering course is to be added to the curriculum of New York University, according to a recent announcement by Charles H. Snow, dean of the School of Applied Science. The new study, which is considered an indication of the ascending importance of motor truck transportation, is to be given by F. Van Z. Lane, chief transportation engineer of the Packard Motor Car Co., Detroit, Mich.

Wood-Preservers' Association Meets at Chicago

Discusses Service Obtained from Treated Timbers Used in Railway Track, Structures and Cars

THE SIXTEENTH ANNUAL MEETING of the American Wood-Preservers' Association was held at the Hotel Sherman, Chicago, on February 10, 11 and 12, inclusive. The program arranged for the meeting covered a wide array of subjects from a review of the cold facts, of actual results secured with treated ties, piles and other timbers, to technical details of plant operation and theoretical discussions of the action of preservative materials in overcoming the action of organisms causing decay.

The officers of this association for the past year were: President, J. B. Card, Indiana Zinc Creosoting Company, Chicago; first vice-president, A. R. Joyce, Joyce-Watkins Company, Chicago; second vice-president, C. M. Taylor, superintendent, Port Reading Creosoting Company, Port Reading, N. J.; secretary-treasurer, F. A. Angier, superintendent of timber preservation, Baltimore & Ohio, Baltimore, Md.

The opening session was called to order promptly at 10 o'clock Tuesday morning by J. B. Card, president. Frederick B. Vose, chairman of the Ways and Means Committee of the Chicago Association of Commerce, welcomed the convention to the city. He emphasized the necessity of conserving men as well as materials. J. H. Waterman, superintendent of timber preservation of the Chicago, Burlington & Quincy, Galesburg, Ill., replied to Mr. Vose in behalf of the association.

The report of the secretary showed a present membership of 305, a gain of 23 during the last year. Among these members are 74 employees of 33 different railroads and 12 employees of the United States Railroad Administration. The report of the treasurer showed a balance of \$714.88.

In his address President Card referred to the difficulties which had confronted the timber-treating industry during the war. He concluded with a strong plea for Americanization.

Registration of 250 indicates largest attendance ever recorded.

Tie Service Tests

A report on service tests of ties was presented by C. E. Gosline, chairman of the sub-committee on Tie Service Tests, which was confined to the results of an inspection of a part of the Delaware, Lackawanna & Western, including the Lackawanna Railroad of New Jersey. The general use of treated ties was started on the former road in 1910, hard wood being used on curves and soft woods on tangents. Large flat-bottom tie plates and screw spikes were used as a protection against mechanical wear. After the first two years the ties were adzed and bored before treatment which consisted of the empty cell (Lowry) process. During the four years from 1915 to 1918, inclusive, only 188 ties were removed on account of failure. Of the 200,000 creosoted ties on the Lackawanna Railroad of New Jersey, 25,000 were oak, beech and maple, 145,000 pine and 30,000 gum. Since the construction of the road in 1910-11, a total of 64 ties have been removed on account of failure, in the following amounts:

	TREATED TIES REMOVED		1917	Total
	1915	1916		
Pine	1	12	10	23
Gum	40	..	..	40
Oak	1	..	..	1
Total	42	12	10	64

The conclusions of the committee were:

1. That the best information pertaining to the life of untreated and treated ties can be had from detailed and accurate records of tie renewals over long periods, and it is urgently recommended that all railroads keep such records.
2. That the treated life of coarsewood ties cannot be obtained when used in tracks of heavy curvature over which there is heavy traffic under the present method of protection against mechanical wear as practiced on this railroad.
3. That particular attention should be called to the following table of tie renewals, which shows that excellent results are being obtained from the use of creosoted ties:

D. L. & W. TIE RENEWALS

Year	Miles of track	Total number of ties	Ties inserted for renewals			Percent- age of total ties inserted to total ties in track	Ties inserted per mile
			Untreated	Treated	Total		
1908..	2,439	6,722,329	676,943	.....	676,943	10.1	277
1909..	2,475	6,813,721	581,952	.....	581,952	8.5	235
1910..	2,500	6,877,974	258,927	163,433	422,360	6.1	169
1911..	2,614	7,186,346	173,815	409,680	583,495	8.1	223
1912..	2,619	7,200,509	180,428	425,498	605,926	8.4	231
1913..	2,644	7,262,170	209,434	534,042	743,476	10.2	281
1914..	2,627	7,242,294	194,512	476,370	670,882	9.3	255
1915..	2,663	7,346,825	304,405	438,832	743,237	10.1	279
1916..	2,656	7,331,287	165,281	352,614	517,895	7.1	195
1917..	2,663	7,349,178	108,629	308,097	416,726	5.7	157
1918..	2,671	7,369,734	83,867	240,199	324,066	4.4	121

The annual report on service tests records of ties was also presented. This included a complete list of the test records on file at the Forest Products Laboratory, Madison, Wis., and covered 38 sheets of tables.

DISCUSSION

George E. Rex, Santa Fe, stated that the record on the Lackawanna proved that ties could be preserved against decay for as long a time as they would resist mechanical wear. F. J. Angier, Baltimore & Ohio, called attention to the need for correction in records to account for miles of track in switches and bridges, which on his road amounts to about 5 per cent. Mr. Rex said that the committee was at work on a standard method of keeping records. Lowry Smith, Northern Pacific, explained a theoretical study of tie renewals based on percentages of renewals each year for ties of a given service life. This showed that renewals at certain times during cycles might be much more or much less than the average, and might thus give a wrong impression as to the exact benefits to accrue from treatment.

Plant Operation

The Committee on Plant Operation presented a report on mechanical devices other than locomotive cranes for the handling of treated material, and the locomotive crane, its uses and limitations, the devices being divided into seven main classes as follows:

- A—Stationary stiff-legged derrick with movable boom.
- B—Cable-ways.
- C—Stationary crane with electric hoist.
- D—Movable electric hoist—Gantry type.
- E—Movable electric hoist—Monorail type.
- F—Locomotive crane.
- G—Miscellaneous.

Except where otherwise specifically stated, the report dealt with the loading of open-top cars only.

Type A, whether hand or power operated will load ties into

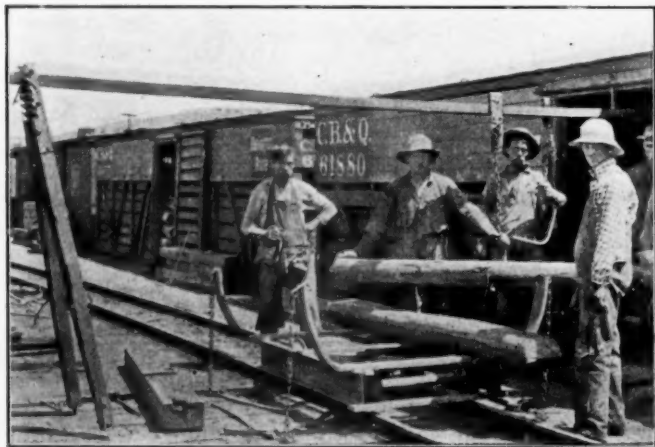
open-top cars in tram-car lots at present for about $1\frac{1}{2}$ cents each.

Type B, the cable-way, is only of limited usefulness in this field.

Type C is a stationary steel framework erected transversely over the tram tracks and the standard gage tracks at the loading platform. An I-beam at the top supports a traveling electric hoist capable of lifting a tramload of ties or other material. The hoist is operated by two laborers—one who manipulates the hoist and helps fasten the chains, handle the tram car bales and move the trams, and another who trips the trip hooks, drops the railroad cars into position, fastens the chains, handles the bales and moves the trams. On a test, 10 trams containing 433 7-in. by 9-in. $8\frac{1}{2}$ -ft. ties were handled by two men in 1 hr. and 30 min., or 138 ties per man-hr.

Type D, the gantry crane, is shown in a photograph. The traveling steel framework, which supports the hoist, spans two standard-gage tracks which may have a third rail for trams if needed. No loading platform is used. The hoist is operated from a cab at the ground level, and the device permits of three dimension handling of the loads. Three men are required to operate this hoist, a hoist runner, a man on the ground handling chain slings, and a tripper on the car being loaded. On a test by this method 10 trams containing 485 7-in. by 8-in. $8\frac{1}{2}$ -ft. ties were loaded into open-top cars in 50 min., or 194 ties per man-hr.

Type E consists of a steel framework erected longitudinally over a standard gage track carrying a monorail from which a traveling electric hoist and cab are suspended. This device differs essentially from Types C and D in that the chain slings of the latter are replaced by a pair of grapple hooks sufficiently large to handle a tramload of ties or other material at one time. Two men are required to operate this crane. On a test 10 trams containing 645 6-in.



The Angier Tie Loader

by 8-in. 8-ft. ties were handled by this method at a rate of 276 ties per man-hr.

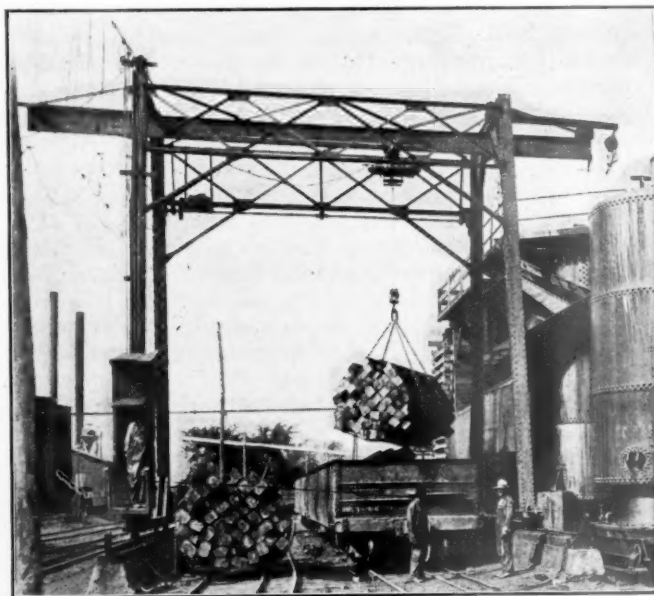
Type F is the locomotive crane. The general preference is apparently for the 8-wheel M. C. B. truck type of crane, with a boom having an effective working radius of 10 to 35 ft., and a maximum lifting effort of 15 to 20 tons at the minimum radius. For handling treated cross-ties with a locomotive crane, no better method is known to the committee than that practiced in a number of plants, whereby tramloads of ties are slung from the tram to their place in open-top standard gage cars in chain or wire rope slings. This practice requires two or three men besides the crane-man—one or two removing bales and placing slings, and one releasing slings and trimming loads. On a test of 18 trams containing 1,080 6-in. by 8-in. 8-ft. ties were loaded into coal cars in 45 min., or 360 ties per man-hr.

Type G is the Angier tie loader, a device of value in loading treated ties into closed cars, saving much of the heavy lifting incident to doing this work entirely by hand. It is operated by day laborers or piece workers, generally the latter, and effects savings of about $\frac{1}{8}$ to $\frac{1}{4}$ cents per tie on the piece work basis at the plants where used. This machine is patented, the patent being due to expire in the latter part of 1920.

On mechanical devices other than locomotive cranes for handling untreated material, the work of the subcommittee was confined to machines for the handling of railroad cross ties, several loaders and stackers were described but none was recommended.

The conclusions of the committee were that:

1. Where open-top cars are available, treated ties can be loaded at a great saving of labor and money if some type of crane



Loading Ties With a Gantry Crane

is used. The locomotive crane has the advantage that it may be used about the plant for other purposes.

2. A locomotive crane is practically indispensable where heavy timbers, poles or piles are handled.

3. No perfected, satisfactory mechanical means have been found for loading into box cars.

4. Considerable work has been done in attempting to design some satisfactory machine for stacking and loading untreated ties, but so far no entirely successful machine has been made.

A Theory on the Mechanism of the Protection of Wood

By Ernest Bateman

Chemist in Forest Products, United States Forest Products Laboratory, Madison, Wis.

There are at least two methods of protecting wood from destruction by living organisms: (1) By controlling the conditions necessary for the life of the organism and thus inhibiting its growth; (2) by the injection of a material which will kill or poison the organism itself or any enzymes through which it may accomplish its work. The first of these means is not practical if the wood is to be used for its usual commercial purposes, since it means control of the temperature, of the moisture content, and of the air content of the wood itself, and it is therefore necessary to resort to the use of a poison.

It would seem reasonable to expect that any material which is poisonous enough to kill an organism of any kind

must first be soluble in the body fluids of that organism, at least to such an extent as to permit a lethal dose to be taken at one time. All wood preservatives must, therefore, be soluble in water to a certain extent, and in this respect at least, oil solutions and inorganic salt solutions must be similar, differing chiefly in the mechanism by which they provide a reserve supply of the poison.

The theory proposed may be summarized as follows:

1. Any substance to be an efficient wood preservative must be soluble in water at least to the extent of producing a toxic water solution.

2. Creosote oil may be considered as consisting of two groups of compounds, one of these being sufficiently soluble in water to render it toxic, the other insoluble and hence not toxic.

3. The non-toxic oil acts as a reservoir for the toxic oils and feeds them automatically, when needed, to the moisture in the wood.

4. The difference between oil preservatives and inorganic salt preservatives as far as this theory is concerned, is in their method of retaining the reserve supply of toxic materials. Zinc chloride has no reserve supply, all the material being soluble in the usual amount of moisture present in air-dry wood. Sodium fluoride may have a reserve supply in the form of solid crystals due to the use of a saturated solution in treatment. Creosote oil may have a considerable reserve supply stored in the oil itself, this supply being fed to the wood as it is needed.

Mr. Bateman presented a second paper wherein he discussed the effect of light oils in timber preservation based on a study of service tests extending over a long period of time and observations on the character of the oils used in past years, concluding with the following questions relative to the correctness of the prevailing understanding as to the relative importance of light and heavy oils in the timber preserving industry:

1. Since these light oils containing 60 per cent or more of oil distilling below 235 deg. C. have preserved both poles and ties beyond their mechanical life, is there any need of a higher boiling oil?

2. Would we not obtain a better penetration and hence longer life by using a low boiling oil?

3. Could these light oils be obtained cheaper than our standard creosote?

4. Since the toxicity of coal tar creosote seems to be measured by the amount of oil distilling below 270 deg. C., ought we not to put a limit upon the amount which may distill above that point in both our creosote and our tar solutions?

Report on Terminology

The Committee on Terminology presented a report on the standardization of titles of employees at timber preserving plants which included an organization chart adaptable for either large or small plants. The committee found that a great variety of titles are now used to designate officers or employees doing approximately the same work; that not enough consideration is being given men in charge of this work and that there is, in regard to employees, a great variation in rates for positions implying approximately the same duties. The committee recommended that the titles of employees be brought to a standard insofar as possible so that the title of a position defines the duties and responsibilities more clearly; that the importance of the industry be brought to official and public attention in so far as possible with a view of increasing the compensation of the men in charge of the work and continuing the interest of competent men in the industry; and that inasmuch as timber preservation is primarily an engineering problem, that it should be included in the engineering department.

The definitions presented by the committee were as follows:

Manager Timber Department.—In charge of timber preservation, inspection, distribution of ties and timber, and conservation of forest products.

Supervisor Tie and Timber Inspection and Distribution.—Reports to manager timber department and is in actual charge of tie and timber inspection and distribution.

Superintendent Timber Preserving Plant.—Reports to manager timber department and is in actual charge of the timber preserving plant.

Chief Lumber Inspector.—Reports to supervisor tie and timber inspection and distribution and is in charge of lumber and timber inspection.

Chief Tie Inspector.—Reports to supervisor tie and timber inspection and distribution and is in charge of tie and switch tie inspection.

Chief Treating Engineer.—Reports to superintendent timber preserving plant and is in charge of treating engineers, firemen, mechanics, and the general mechanical upkeep of the timber preserving plant.

Treating Engineers.—Report to chief treating engineer and handle equipment during process of timber treatment, making necessary run calculations.

Assistant Treating Engineer.—Reports to treating engineer, being an apprentice to him.

General Foreman.—Reports to superintendent timber preserving plant and is in charge of all outside labor connected with the handling and transportation of material in the yard.

Chemist.—Reports to superintendent timber preserving plant, checks the treatment of material, makes all necessary analyses and does research for the advancement of the industry in general.

Chief Clerk.—Reports to officer in whose office he is located and has charge of all office work in connection with that office.

Car Construction

Due to the disturbing condition surrounding railway car shops the committee on car construction was unable to present a detailed report on the actual condition existing in the more important car shops. Instead, special study was presented on the causes of defective conditions necessitating repairs to wooden freight equipment at the Missouri, Kansas & Texas shops at Denison, Tex. This showed that of the 399 cars repaired during the month of July, 1919, an average of 82.3 per cent of the repairs were due to decay in the following percentages:

Description	Decay ft. b.m.	Per cent	Other ft. b.m.	Per cent	Total ft. b.m.
Draft timbers	159	...	159	100.0	159
End sills	4,422	34.4	8,400	65.6	12,822
Deadwood	18	7.4	224	92.6	242
Long sills	40,185	68.0	20,622	32.0	60,807
Sub-sills	545	26.2	1,494	73.8	2,039
End posts	1,226	32.4	2,562	67.6	3,788
Coal car sides	9,337	80.1	2,311	19.9	11,648
Running boards	9,365	97.3	256	2.7	9,621
Roofing	23,632	100.0	...	...	23,632
Siding	28,065	89.5	3,264	10.5	31,329
Lining	22,602	89.1	2,748	10.9	25,350
Decking	74,465	95.4	3,586	4.6	78,051
Grain strips	5,971	96.5	216	3.5	6,187
	219,833	82.3	45,833	17.7	265,666

As a means of introducing preservative methods along lines of least resistance, the committee recommended the application of refined coal-tar creosote oil, conforming to the Railroad Administration Specification R 828 A, either by spraying or brush application to all points of contact, of sills, posts, braces, of freight car equipment. These treatments are recommended for application to new construction only when more efficient means are not available. Such an application is most practical for repair work, as conducted under present conditions. Wherever possible the preservative should be heated to 150 deg. F., but during the summer a properly refined oil may be used without heating. An application made in this manner with refined creosote is more economical and decidedly more effective than with other miscellaneous proprietary products now employed.

Rapid Deterioration of Sap Pine Ties

By C. O. Deabler

Tie and Timber Agent, Southwestern Region, St. Louis, Mo.

I believe a record should be made of conditions in the production of sap pine ties during the past year that any criticism or reflection of sap pine as a suitable wood for cross ties may be intelligently answered. Furthermore, there will probably be failures of ties produced and treated during this period, which in time to come, may invite unfavorable comment of a treating plant or the treating industry.

From reports of the United States Weather Bureau for a period of 29 years, it has been found that the months of October and November, 1919, were decidedly abnormal in the states of Arkansas, Louisiana and Texas. They were characterized by comparatively high temperatures, excessive and very frequent rainfalls, and an absence of sunshine. The humidity during this entire period was abnormally high. All of these circumstances were extremely favorable to the rapid development of all sorts of decay-producing fungi, not only those responsible for the decay of timber, but all forms affecting agricultural crops. It is not at all surprising, that with these climatic conditions prevailing throughout the region in which sap pine cross ties have been produced, a marked development of the chief sap pine destroying fungus, took place.

Another point of interest deals with the rapidity with which ties become infected and subsequently decayed. In ordinary seasons a pine tie, when cut during the latter part of the summer, has usually been found to be free from this infection for at least three or four months. But during the latter part of 1919, this rate was much accelerated. A tie in a lot hauled to the tie yard within 24 hours after it was made and there stacked in approved fashion on a well-drained cinder-covered yard was found to be badly infected 93 days after it was cut from the tree.

One point in connection with the life history of this fungus, which it is important to remember in all points of this discussion, is that there is a certain definite period in the life history of the fungus where its presence cannot be recognized by an outside inspection of a piece of timber. This will explain why a great many ties which were inspected and pronounced perfectly sound, using the best visual inspection possible, showed fruiting bodies on the outside after several weeks in transit and could then easily be detected as infected ties.

We all realize and agree that the sap pine tie is not of a desirable wood, compared with the species previously used by most roads, but tremendous drain on our hardwood forests, and high prices, brought about by the unusual conditions during the past three years, made it necessary for railroads to consider other than hardwoods.

It should also be pointed out that the type of production during the past summer differed considerably from that previously secured, even in sections where pine ties had been produced. In previous years the number of pine ties produced was limited to the minimum quantity needed by the railroads. This year no limit was put on production and they came out in such vast quantities that by the end of September, there were between three and four million sap pine cross ties on the right-of-way. This flood, furthermore, was brought about rather suddenly as will be readily evident from figures of the number of ties inspected during July, August, September and October in the Southwestern Region, which were as follows:

July	1,393,906	September	2,624,202
August	1,855,822	October	2,296,907

Many of these ties, made as they were by people unfamiliar with pine tie production, were possibly not handled as expeditiously as they should have been in bringing them from the woods to the right-of-way, and considerable deterioration probably took place while the ties were still in the hands of producers. Attention should also be called to the fact that this very large production took place during a season of the year when wood cut from pine trees was in the best possible condition for rampant infection. These conditions, taken in connection with the extraordinary climatic conditions already mentioned, all contributed to the extensive deterioration which actually occurred.

It would be a hard problem to give all the reasons for the deterioration of the sap pine cross ties in the Southwestern region during 1919. Summing up the situation, however,

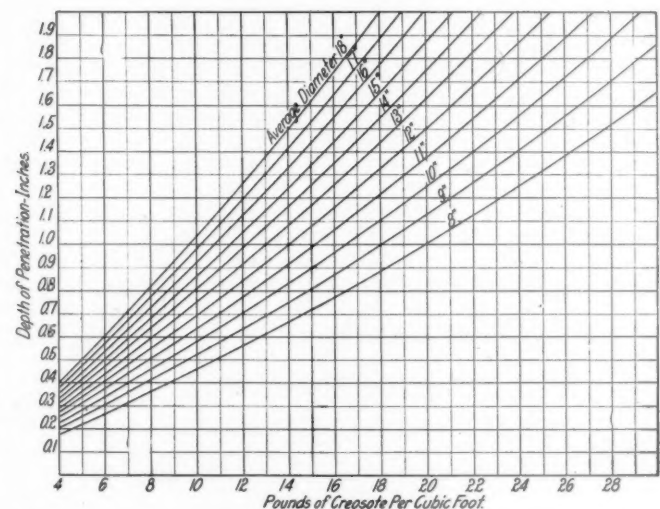
it was brought about largely by the extraordinary climatic conditions, the unlimited production, congested transportation, and the failure of some producers not familiar with sap pine preservation, to realize the need for getting the ties to the right-of-way before infection had taken place.

The sap pine cross tie should reach the treating plant as quickly as possible, and be treated at the proper time. Many plants estimate the age of cross ties when arriving at the plant and add to this age the customary time allotted for the proper seasoning, treating the ties at the expiration of this time. This system should be corrected, as ties are received quite frequently at treating plants and carded for some date of treatment, when they vary several months in age. This results in some ties being treated too green and others beyond the proper time. My suggestion is to correct this estimating of the age of ties by the use of the dating hammer as soon as it can be applied, and separate the ties at the treating plant.

Other Subjects Discussed

A report on service tests of flooring and paving was presented which confined itself to an account on the causes of fires in bridge floors at Detroit, Mich., Kansas City, Mo., and Portland, Ore.

The roadway of the Belle Isle bridge across the Detroit river was floored with creosoted wood blocks 3½ in. deep on a creosoted plank substructure. In 1915 this bridge was destroyed by a fire which, it is supposed, originated from the ignition of some dry and untreated side walk timbers by sparks from a municipal asphalt wagon. The fire spread rapidly to the creosoted structure, the collapse of the road-



Relation of the Intensity of Treatment to Depth of Penetration in Round Piling

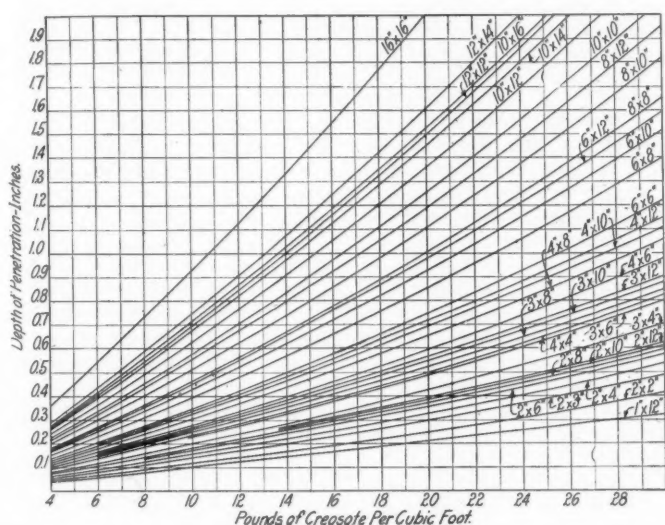
way timbers being accompanied by a collapse of a large portion of the steel spans.

The creosoted timber substructure of the Missouri river bridge at Kansas City which caught fire in August, 1919, consisted of a creosoted plank roadway, the fire being caused by sparks from a locomotive passing under the bridge.

The Portland, Ore., bridge is a double deck structure, the lower deck being used for railway traffic while the upper deck is for street car traffic, vehicles and pedestrians. The floor system of the upper deck is composed of 4-in. Douglas fir creosoted blocks laid on creosoted planks and ties of the same material. The fire is supposed to have started in some untreated lumber located on the bottom chord of the lift-span, spreading rapidly until it had destroyed the upper deck for a length of about 430 ft.

At Detroit and Portland, it was found that where it was necessary to tear up the roadway in order to reach the fire underneath, the spread of the flames was greatly accelerated by the draft thus created, rendering the fire very difficult to combat. At Kansas City on the other hand, the planking was not disturbed and the fire was extinguished without any difficulty.

The penetration of creosote in various sizes of sawed lumber and round piling was described in a paper by R. H. Rawson, consulting timber engineer, Portland, Ore. In order to get at the fundamentals of the question, Mr. Rawson co-ordinated the data that he had collected on the subject and put these in such shape that some definite idea might be obtained relative to the depth of penetration of creosote in different sizes of material. The theory on which he worked was that the wood contains a certain volume of cavities, or open spaces, which can be filled with preservatives. Once



Relation of the Intensity of Treatment to Depth of Penetration in Squared Timbers

the values for the voids have been determined, the amount of creosote required to fill the wood to a certain depth can be readily computed. The results, as plotted to show the relation between penetration and the amounts of preservatives absorbed by sawed timbers and poles, are shown in the two diagrams.

The effect of preliminary steaming in the treatment of air seasoned ties was discussed by S. S. Watkins, Watkins Creosoting Company, with regard to the specifications of the United States Railroad Administration which required the use of preliminary steam in the Burnettizing and Card treatments of air-seasoned ties. When these specifications became effective in 1919, it was decided by the plant management to maintain pressure periods of the same duration and intensity as had been the usual practice in order to study the effect of the preliminary steaming. The results arrived at are not in any sense experimental, but represent the summaries of the daily plant operating records, the relative condition of the ties treated being as nearly the same as could be obtained in ordinary practice.

The tests showed that due to the use of preliminary steam, the net absorption in the treatment of red oak ties was increased 12.6 per cent and the net absorption in the treatment of sap pine ties was increased 52.2 per cent.

The iodine-potassium ferricyanide-starch color reaction test for determining the penetration of zinc chloride in cross-ties was described in a paper by Galen Wood, chemist, Port Reading Creosoting Plant, Port Reading, N. J., wherein he stated that it is very evident that in treating wood with water soluble salts, some indicator is necessary to determine

the penetration of the colorless solution into the wood, if control of the work and the efficiency of the treatment is desired. The iodine method which he presented for determining zinc chloride penetration is based on the principle that zinc ferricyanide liberates free iodine and free iodine in turn gives a dark blue stain with starch solution, thus making the depth of penetration clearly visible.

Committee No. 10 on Non-pressure Treatment presented a report related to the problems encountered in the butt treatment of cedar poles of which undoubtedly the most important both to the plant operators and to the consumers of butt-treated poles, is how to secure not only a uniform penetration of oil throughout the treated portion of each pole, but also to produce a uniformity of treatment of the different poles in a charge. The extent of seasoning and the condition commonly termed as "case hardening" bears directly on these variations.

The results of the study made indicate that the condition technically known in lumber seasoning as "case hardening" is not the same as the condition referred to by the same name in the pole treating industry. Case hardening in poles appears to be caused by irregularities in the conditions controlling air seasoning. The "case hardened" pole sections all had a hard, glossy appearing surface, and usually one or more large checks extending deeply into the heart of the pole were present with practically no small checks. It appears, therefore, that in general the "case hardened" poles or areas can be identified by the absence or lack of distribution of numerous small checks and the presence of a few large checks, and that until a practical method of overcoming the effect of "case hardening" on penetration of oil is developed, a greater uniformity in treatment may be secured by classifying poles and treating only non-"case hardened" ones. Experiments made with poles soaked in water and in zinc chloride solutions failed to demonstrate any benefit from such preliminary treatment.

A report on the creosoted piling removed from Long Wharf, Oakland, Cal., dealt with the classes of piling used in that structure, their longevity, condition on removal, etc., after from 21 to 29 years of service in salt water. This structure and conditions relating to it were described in an article in the *Railway Age* of July 4, 1919, page 27.

Hunter J. von Leer of the Indiana Zinc Company, Terre Haute, Ind., raised a question as to the necessity of separating ties in groups according to their absorptive properties and presented an extended argument in which he contended that thoroughly satisfactory results can be obtained without going to the extra expense and trouble of this separation.

The Committee on Promotion and Education reported that work had been continued during the year looking toward the establishment of an organization which could bring means for the conservation of timber through treatment and proper methods of treating it to the attention of those interested in the use of timber.

The annual dinner of the association was held in the Hotel Sherman Wednesday evening. Samuel O. Dunn, editor of the *Railway Age*, was the speaker, taking for his subject the present railroad situation.

A paper on the determination of the amount of water in stored creosote by W. E. Jackson, explained how a two-inch pipe painted with white lead placed in a tank of creosote would disclose relative depths of unmixed oil, emulsion of oil and water, by the effect on the paint. This subject was also discussed by S. R. Church of the Barrett Company, who described a method of handling oil in tanks that would insure a higher degree of accuracy than is commonly obtained.

E. M. Blake gave an account of the development of the process of perforating timbers that resist treatment in order to secure a deeper and more uniform penetration of the preservative. This subject was covered in an article in the *Railway Age* for December, 1919, page 1203.

Train Accidents in December¹

THE FOLLOWING is a list of the most notable train accidents that occurred on the railways of the United States in the month of December, 1919:

Collisions

Date	Road	Place	Kind of Accident	Kind of Train	Kill'd	Inj'd
5.	Gulf C. & S. F.	Kopperl, Tex.	bc	F. & F.	0	5
6.	Gulf C. & S. F.	Belton, Tex.	rc	P. & F.	0	8
9.	Erie	Newton, Ind.	rc	F. & F.	1	1
16.	Nashville, C. & St. L.	Phelps, Ga.	bc	P. & F.	0	2
†18.	Norfolk & W.	Walton, Va.	rc	P. & P.	5	17
19.	Chi. & N. W.	Missouri Val.	rc	F. & P.	0	11
*†20.	Canadian Pacific	Onawa, Me.	bc	F. & P.	24	37
25.	Wabash	Granite City	rc	P. & F.	0	7
29.	Wabash	Litchfield	rc	P. & F.	0	5

Derailments

Date	Road	Place	Cause of derailment	Kind of Train	Kill'd	Inj'd
1.	Chi., Ind. & L.	Greencastle	b. rail	P.	0	0
3.	Ft. Worth & D.	Fruitland	b. rail	P.	0	31
*†4.	M. B. & S.	Muscataine, Ia.	d. rail	P.	3	12
7.	Penn.	Bengies, Md.	acc. obst.	P.	0	1
8.	C. C. & O.	Kermit, Va.	.....	P.	0	13
8.	C. C. & St. L.	Marion	d. switch	P.	0	0
†10.	Lehigh V.	Auburn	b. rail	P.	1	32
11.	Balt. & Ohio	Glenwood, W. Va.	.....	P.	0	1
†15.	Atlantic C. L.	Tarboro, N. C.	ms.	P.	1	3
18.	Balt. & Ohio	Chemical	b. rail	P.	0	4
19.	Chicago & Alton	Mt. Forest	b. rail	P.	0	31
†21.	St. Louis-S. F.	St. James	b. axle	P.	3	76
26.	Chi., Ind. & L.	Springville	unx.	P.	0	1
31	D., L. & W.	Montrose, Pa.	unx.	P.	1	1

The trains in collision near Kopperl, Tex., on the 5th, were northbound freight No. 38 and southbound freight No. 37, the southbound being at a standstill on the main track. The other train came on at good speed on a descending grade. It should have entered the side track but there was a dense fog and it appears that the speed was not under proper control. Five trainmen were injured.

The trains in collision, near Belton, Tex., on the 6th, were an eastbound special passenger train of 12 coaches (occupied by 750 Chinese traveling in bond from San Francisco to Havana, Cuba, by way of Key West, Fla.), and a preceding freight, the passenger train running into the rear of the freight, which was at a standstill. Four trainmen were injured and four of the Chinese sustained slight cuts and bruises. The collision was due to excessive speed within yard limits where the rule requires trains to run under control.

The trains in collision on the Erie Railroad at Newton, Ind., on the 9th of December, were through freights. The leading train was at a standstill, and was run into at the rear by the following train, which approached at uncontrollable speed on a descending grade, by reason of the failure of the airbrakes, due to ice having formed in the air line between the second and third cars of the train. The conductor had noticed the falling pressure on the gage in the caboose, and with his men, had gone on top of the cars and was setting brakes; but was not soon enough to prevent the collision. The engine and eight cars were knocked off the track and a part of the wreck fell against the signal cabin at the crossing of the Pennsylvania Lines, knocking it down. An engine-man of the Pennsylvania, in the cabin, was killed, and the signalman and one brakeman were injured.

The trains in collision on the Nashville, Chattanooga & St. Louis, at Phelps, Ga., on the night of the 16th, were northbound passenger No. 6, and southbound freight No. 47. Both engines were damaged, and the engine-man and fireman of the passenger train were injured.

The trains in collision at Walton, Va., on the night of the 18th, were eastbound passenger No. 4 and following pas-

senger train No. 26. The leading train was standing at a watertank, and its two rear coaches were badly damaged. Five passengers were killed and six employees and 11 passengers injured. The collision was due to the failure of the engine-man of train No. 26 to run under control, after passing a red automatic block signal.

The trains in collision on the Chicago & North Western, near Missouri Valley, Iowa, on the 19th, were westbound passenger No. 215, which had just entered the main line from the Sioux City line, and westbound fast mail train No. 9, which ran into the rear of No. 215, damaging the rear sleeping car. Eleven passengers were slightly injured. The collision was due to "non-observance of signals on the part of the brakeman of No. 215 and the engine-man of train No. 9."

The trains in collision on the Canadian Pacific near Onawa, Me., on the 20th, were a westbound passenger and an eastbound freight. The freight engine knocked the passenger engine off the track and into the ditch and crushed two passenger cars. Twenty passengers and four employees were killed and 33 passengers and two employees were injured. The wreck took fire from the locomotive fireboxes and some of the victims were reported burned, but none fatally. The passenger was the third section of regular westbound passenger, No. 39. The freight had met the second section at Bodfish, two miles west of Onawa and should have waited there for the third. The freight, while standing at Bodfish waiting for the passenger trains, received an order, form 19, giving it time on the fourth section of No. 39; and it appears that the men in charge of the freight acted as though this had given them time on the third section. This accident was reported in the *Railway Age* of December 26, page 1256.

The trains in collision at Granite City, Ill., on the 25th, were a westbound freight and a westbound passenger, the passenger running into the rear of the freight and wrecking several cars. The passenger engine was overturned, and the engine-man and fireman were slightly injured. Five other persons were injured.

The trains involved in the accident near Litchfield, Ill., on the 29th, were a northbound freight, moving at low speed, a northbound passenger train, No. 6, and a southbound passenger No. 17. No. 6 ran into the rear of the freight, wrecking the caboose and several cars, and blocked the southbound track; and No. 17 ran into the wreck. Several cars in the southbound train were thrown off the track. One employee was injured, also four passengers slightly. The freight had not been properly protected by flag.

The train derailed on the Chicago, Indianapolis & Louisville, near Greencastle, Ind., on the first, was southbound passenger No. 3. The two rear cars ran off the track by reason of a broken rail; but no persons were injured.

The train derailed near Fruitland, Tex., on the 3rd, was a southbound passenger. Five coaches were thrown off the track by a broken rail and 31 passengers were injured.

The train derailed on the Muscatine, Burlington & Southern, near Muscatine, Iowa, on the evening of the 4th, was a southbound passenger consisting of a single gasoline motor car. The car was thrown off the track by a defective rail and was overturned. The gasoline took fire and three passengers were killed and 10 injured. The bodies of the killed were burned beyond recognition. Two employees were injured.

The train derailed at Bengies, Md., on the evening of the 7th, was southbound passenger No. 129. The locomotive struck an automobile on a crossing, and with one baggage car and five passenger cars, was derailed. The occupant of the automobile was killed.

The train derailed on the Carolina, Clinchfield & Ohio

¹ Abbreviations and marks used in Accident List:

re, Rear collision—bc, Butting collision—xc, Other collisions—bc, Broker—d, defective—unf, Unforeseen obstruction—unx, Unexplained—derail, Open derailing switch—ms, Misplaced switch—acc, obst., Accidental obstruction—malice, Malicious obstruction of tracks, etc.—boiler, Explosion of locomotive on road—fire, Cars burned while running—P, or Pass., Passenger train—F, or Ft., Freight train (including empty engines, work trains, etc.)—Asterisk, Wreck wholly or partly destroyed by fire—Dagger, One or more passengers killed.

near Kermit, Va., on the 8th, was a southbound passenger. Two coaches were overturned and 13 passengers were injured.

The train derailed near Marion, Ind., on the night of the 8th, was southbound passenger No. 3. Running at 40 miles an hour the express car and smoking car were derailed in a cut and badly damaged. There were in the train about 75 passengers, all of whom escaped injury. The cause of the derailment was a defective switch, a broken lug allowing the switch point to become loose.

The train derailed near Auburn, N. Y., on the 10th, was a southbound passenger No. 282. Two coaches were overturned and 33 passengers were injured, one of them fatally.

The train derailed at Glenwood, W. Va., on the evening of the 11th, was northbound passenger No. 73. The engine was thrown off the track by a broken rail and six cars also left the rails. One passenger was injured.

The train derailed at Tarboro, N. C., on the night of the 15th, was southbound extra freight No. 970. The 26th car in the train was thrown off the track at a switch and with two other cars and the caboose was wrecked. The wreck took fire from the overturned stove in the caboose and was partly burned up. The conductor was killed and three trainmen were injured. It is believed that the switch was thrown under the moving train.

The train derailed at Chemical, W. Va., on the 18th, was an eastbound passenger. Two coaches were thrown off the track by a broken rail, and fell down a bank. Four passengers were injured.

The train derailed near Mount Forrest, Ill., on the 19th, was northbound passenger No. 76. Two baggage cars were overturned. Thirty-one passengers were injured; all but one of the injuries being classed as "slight." The cause of the accident was the breakage of a 100 lb. rail, found to be piped.

The train derailed near St. James, Mo., on the 21st, was eastbound passenger No. 10, second section. By the breaking of an axle under a coach, six coaches were derailed, and three passengers were killed or fatally injured. Seventy-six other passengers were injured, all but five of the injuries being classed as "slight."

The train derailed near Springville, Ind., on the 26th, was a westbound passenger. The locomotive was ditched, and the fireman was slightly injured.

The train derailed near Montrose, Pa., on the 31st, was local passenger No. 752. While descending a steep grade at about 25 miles an hour, a milk car was derailed, and with the locomotive, was overturned, and the engine man was killed. The fireman was injured. The cause of the derailment was not determined.

Canada.—Seven train accidents received prominent mention in Canadian newspapers in the month of December. In a rear collision on the Canadian Pacific, at Milan, Que., on the morning of the 11th, a trainman and another person on a freight train, not an employee, were killed, and three trainmen were injured. A westbound special passenger train occupied by coolies from France, en route to China, ran over a misplaced switch and into the rear of a freight, standing on a side track. It is said that the switch light indicated clear. At Marona, Ont., on the 20th, there was a collision due to a maliciously misplaced switch. Five derailments, none of them reported as resulting in fatal injuries, occurred as follows: On the 18th, at Smith's Falls, Ont., on the Canadian Pacific, two coaches overturned. At Chip Lake on the Canadian Northern on the 17th and at Edson on the same road on the 18th, the through express train in each case. At Fredericton Junction, N. B., on the 26th, train No. 40 of the Canadian Pacific. At Edmonton on the 29th, the Canadian Northern express, the third accident in that region to that train within two weeks.

Wage Demands Refused by Director General and Referred to President

WAGE DEMANDS PRESENTED by the 14 principal organizations of railway employees, which it has been estimated would add from \$800,000,000 to \$1,000,000,000 to the payroll of the railroads if granted, were definitely refused on Wednesday, February 11, by Director General Hines, but at the request of the organizations his report on the matter and their arguments were referred to the President with his recommendations for a final decision. President Wilson was to give the final answer of the government on the question of further increases in pay of railway employees at a conference on Friday morning with a committee of three chosen by the labor leaders, including B. M. Jewell, acting president of the Railroad Employees' Department of the American Federation of Labor, E. J. Manion, president of the Order of Railway Telegraphers and Timothy Shea, acting president of the Brotherhood of Locomotive Firemen and Enginemen. It was expected that he would confirm the decision given on Wednesday by Federal Director Hines and counsel a little more patience pending further efforts to reduce the cost of living as a desirable alternative to wage increases that would tend to increase it still further.

Director General Hines did not publicly announce his decision, stating merely that he had been unable to reach an agreement with the labor leaders, but it was understood from other sources that he had reiterated his insistence throughout the week or more of negotiations with the officers of the 14 organizations, that he was in no position to grant further general wage increases before relinquishing the railroads to private management, that the employees had already received increases commensurate with the increase in the cost of living and that a further general increase would only tend to aggravate the situation by resulting in further price increases. His final answer to the requests for further wage orders which were presented during last summer and fall, and which have been thoroughly investigated at public hearings and otherwise by the Board of Railroad Wages and Working Conditions, was given after the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers and the Brotherhood of Railroad Trainmen had threatened strikes unless their demands were acceded to. A strike of the maintenance of way employees has been called for February 17 and the trainmen's brotherhood has taken a strike vote. The statement authorized by Mr. Hines after the final conference on Wednesday was as follows:

"Since February 3, the director general has had frequent conferences with the chief executives of the railroad labor organizations for the purpose of devising means for disposing of the pending claims for wage increases. During these conferences the executives of the labor organizations have expressed their views with great ability and frankness. The director general has not been able to agree with them as to how the problem should be disposed of in the view of the early termination of federal control, and is now laying before the President the representations of the executives of the organizations and also his own report for the purpose of obtaining the President's decision in the premises. In any event the conferences have been decidedly helpful in bringing out a clearer development as to the real issues involved and as to the character of evidence pertinent to those issues and the discussion throughout has been characterized by courtesy as well as candor and with a sincere purpose on the part of all to try to find a solution."

A committee of 10 representing the maintenance of way brotherhood called on Mr. Hines on Thursday and formally notified him of the strike vote. Another conference was also to be held with W. G. Lee of the trainmen, who on January 23 had served formal notice that "on and after February 23

the brotherhood must be considered as having withdrawn from or served its connection with any and all of the provisions of General Order No. 13 and the brotherhood's representative on Railway Board of Adjustment No. 1 will be withdrawn on that date." General Order No. 13 was issued by Mr. McAdoo early in 1918 to put into effect an agreement covering the adjustment of grievances signed by the regional director and the heads of the four train service brotherhoods. Mr. Lee said in his notice that "General Order No. 13, executed during the war as a war measure, has now been continued more than a year after the close of the war, and the pressure coming to me from train and yard men throughout the country to press the wage demands presented last July to a favorable conclusion compels me to give official notice to you."

The maintenance of way brotherhood has not served a 30-day notice, unless the presentation of its demands last summer may be so construed. On November 22 it signed with the director general a national agreement effective on December 16, which contains a clause providing that there shall be no change in it until after 30 days' notice.

The Brotherhood of Railroad Trainmen is taking a strike vote of its general committee, because under a change in its constitution a referendum vote of the membership is no longer required, but in his letter ordering the strike vote, Mr. Lee stated specifically that if a strike were called no strike benefits would be paid because the brotherhood's \$1,500,000 fund would only last a few days and it must be conserved.

The conference which began on February 3 was precipitated by a request from Mr. Lee for a conference on his demands. Mr. Hines then invited all of the 14 organizations to a conference so that he might discuss the situation with them all at once. Neither the engineers nor the conductors had filed formal wage demands, although all had signed a letter to the director general insisting that unless the cost of living were reduced they must have an increase in wages. Last August the President and Mr. Hines had insisted that the wage demands be held in abeyance pending the government's campaign to reduce prices, and the position taken by the organizations was that the government has utterly failed in its efforts to reduce living costs and it was up to it to "make good" by an increase in wages. Neither the Railroad Administration nor the labor leaders has given out any of the details regarding the discussion at the conferences, but it is understood that Mr. Hines has relied on statistics comparing the wage increases and increases in the cost of living and has taken the position that the cost of living has at least been held in check during a time of the year when it normally rises.

A. E. Barker, president of the maintenance of way brotherhood, which claims between 300,000 and 400,000 members, participated in the conference last week but left for Detroit declaring that Mr. Hines had not promised anything and that he did not believe he was going to. On February 9 the general chairman issued orders directing a strike for 7:00 a. m., Tuesday, February 17, unless the Railroad Administration had granted the demands by Saturday, February 14. Mr. Barker said that it was decided to issue the strike call before the Railroad Administration should have an opportunity to pass the burden to the private owners of the railroads.

On Tuesday the labor officers left with Mr. Hines a long communication, to which he replied verbally on Wednesday, after which they presented another, which may have been the request for an appeal to the President. Shortly thereafter Mr. Hines and his associates who have participated in the conferences, W. T. Tyler, W. S. Carter, J. G. Walker and J. A. Franklin, left the room to give the labor leaders an opportunity to decide whether they wanted to amplify their statements. In a few minutes they announced that their previous statements had covered the ground and after a con-

ference with his associates, Mr. Hines gave out the statement that the matter would be referred to the President. Mr. Hines has kept the President advised on the progress of the negotiations through frequent conferences with Secretary Tumulty and it was stated that the President would take up the matter at once.

In a statement issued Wednesday night, W. G. Lee said: "The trainmen take the position that more than a reasonable time has since elapsed and that the cost of living has not been reduced, but instead has been increased since that time, and that it is now up to the federal government to make good the pledge made by the President in his letter of last August as understood by labor."

"I expect to get the written answer of the director general to the trainmen's request at the next conference with him, after which the special committee of 20 officers and general chairmen, authorized by the international convention of the brotherhood to handle the subject, will take final action relative to its disposition."

The other labor leaders were not expected to issue a statement until after hearing from the President.

It was announced that President Wilson would have a personal conference with the labor committee at 10:30 Friday morning, and Mr. Jewell, Mr. Manion and Mr. Shea were selected to call upon him. Mr. Hines' report, together with the communications addressed to him by the labor leaders outlining their position and their arguments were transmitted to the President about 3:00 p. m. on Thursday. It is believed that the labor leaders expected that his answer would be that recommended by Mr. Hines and that most of them were prepared to report to their followers that they had gone as far as they could, although the maintenance of way men and the trainmen were represented as being in a rather belligerent attitude.



From the Cleveland Plain Dealer

"Don't get excited, she'll come to all right."

The Railroad Labor and the Freight Rate Problems*

If Strikes Must Come Let Them Come Now—Cannot Society
Survive the Contest?

By Charles A. Pronty

Director of Valuation, Interstate Commerce Commission.

IN THE PAST I have stood among the so-called friends of labor. I have favored most laws enacted for the benefit of labor. Among other things, I have always been a most earnest advocate of the right of labor to organize. Capital is organized. The owner of a factory is a single entity acting as a unit; unless the labor of that factory has the right to get together and act as a unit also, it cannot fairly compete with capital. I still implicitly believe in this right and I would not object to a law which punished an employer who discharged an employee for the reason that he was a member of a labor organization.

I have further insisted in the past upon the right of organized labor to strike. I favored making labor in this respect an exception to the general rule against monopolies and conspiracies. I am still for that exception. While we should by the creation of boards of conciliation and in every other proper way remove the inducement to strike, still the final right must remain. The strike is the offensive weapon of labor and to take it away is to rob labor of its only effective means of self protection.

While, however, this should be the general rule there are certain exceptions to that rule. Just as the control of certain kinds of property is taken out of the hands of its owners, so certain kinds of labor must forego this right to strike, and for exactly the same reason. Of this the railroad is the most conspicuous instance.

You all perfectly understand that the private property which is invested in our railroads is not controlled by its owners, but by the government. The government determines, or may determine, how a railroad shall be constructed and equipped, upon what schedule its trains shall be operated, and above all the amount which it may charge for its service. All this is for the reason that the railroad is performing a service of such immediate importance to the entire community that the public must in this manner protect itself.

What is true of the money invested in these railroads is true of the labor which operates them. The government cannot say to a dollar of private capital, "you shall invest in a railroad," nor can it say to an individual, "you shall work for a railroad," but it can say and should say both to the man and to the dollar that when once embarked in railroad service it shall so conduct itself as not to inflict injury upon the public which it serves.

Consider for a moment what this situation is. The railroad labor of this country is so organized that it can at any given moment stop operations by rail in any section of this land, or throughout the country as a whole. And what does a strike of that character mean? What would it mean to you here in Boston? It would mean death from cold and starvation. It would mean riot and bloodshed and whatever else goes with the letting loose of famished humanity.

So long as that is possible, and so long as the government has no power to protect itself against that possibility, there is no government. If one class in this community can say to every other class, pay us so much more for our services or you shall starve, there is no longer a democratic form of government.

And such a possibility is no mere fancy. Within sixty

days responsible labor leaders have declared that a general strike should come unless their demands were met. The President said the coal strike was unthinkable, but it came.

The Cummins bill deals with this situation by prohibiting strikes upon the part of the men and lockouts upon the part of the employer. A tribunal is provided to which the claims of both parties may be presented, and the decision of that tribunal is final. The right of the individual to quit work is not interfered with, but the conspiracy to quit by concerted action is made unlawful and prohibited.

Let Battle Come Now

It has been said that railroad labor would not permit the passage of such legislation, that it would prevent it by a general strike. The provision is right. That or its equivalent must be enacted if we are to live under a government by law and not by force. For my own part I do not for a moment believe that the railroad labor of this country would decline to obey such an act, although it would earnestly oppose its passage. I cannot believe that the railroad employees of my own little state, Vermont, probably the best paid and the most intelligent of any class of labor in that state, would wilfully defy a statute of the United States even though called upon to do so by radical labor. But if I am wrong, if the enactment of this legislation means a railroad strike with or without sympathetic strikes, let it come. We can meet it now better than we can later on. If society cannot survive that contest it is not worth preserving.

Higher Rates Must Come

To my mind there is no way in which to take care of the Boston & Maine and these other lines except by an increase in their gross revenues. There ought to be some increase in traffic which may help, but in the main this must come from an advance in their transportation charges.

It is said that rates have already been advanced and that business cannot endure a further advance. While it is true that both passenger and freight rates have been increased, it is also true that those rates are still relatively low. They are high measured in dollars, but are low measured either by the cost of service or the value of the article transported.

Cost of transportation has ordinarily increased less than any other considerable item of cost entering into a manufacturing total. Reckoned in per cent of the value of the things transported, the freight rate is today lower upon most articles than it has been for the last twenty-five years. While passenger fares, upon the railroads of southern New England have been advanced time after time, there never was a period when so many people traveled and paid their fares with such apparent ease as today.

Nor do I believe that the business of New England would be seriously crippled by a further advance in freight rates, provided that your competitors were forced to bear the same increase in their transportation charges. But if your transportation charge is for any reason increased more than that of your competitor, you are at once placed at a disadvantage. It is this feature of the situation which has troubled me, and it is to this which you gentlemen should give the most earnest attention.

Do not infer that I am advocating any wild increase in

*From an address before the Associated Industries of Massachusetts, at Boston, February 2, 1920.

rates. Some increase must in my opinion be made. That increase should be just as little as it can be and serve the purpose. The public should demand of the Boston & Maine efficiency and economy, but it must permit, if private operation is to continue, a reasonable return upon the fair value of the property which is being used in the public service, and for the first year that return, in the interest of the public, should be too great rather than too small. Whether this advance should be upon both passenger and freight traffic, whether it should equal 15, or 20, or 25 per cent, must be determined by a painstaking investigation in which you gentlemen should participate.

Turning to Auto Truck

It may be objected that a further advance in short distance rates will divert traffic from the railroads to truck and this without doubt would finally, and in my opinion, ought to result. A large part of the traffic between the cities of southern New England and points from 20 to 100 miles distant, depending upon the character of the traffic, should move by automobile rather than by train. In the past it has been a cardinal principle with railroads to get all the traffic upon the best terms possible. A more discriminating policy will prevail for the future. It is coming to be understood that it costs money to handle traffic and that in the interest of the general public, including the carrier, business should be handled by whatever means a satisfactory service can be rendered with the greatest economy. Sometimes this is by water, sometimes by rail, sometimes by automobile, and it is my conviction that in the near future there is bound to be a marked development in the direction of the latter.

Merging Railroad Systems

What shall be done for the immediate assistance of our New England railroads is a burning question, but what is to be the final disposition of these same railroads is a much broader and more important one.

After years of effort to enforce competition between railroads, it has finally come to be generally realized that there can be no competition in the rate and that competition in the service often costs more than it is worth. Students of the subject generally agree that there should be a putting together of the weaker and the stronger properties, and that without this it will be found extremely difficult to care for the weaker road which must in some way be done if private ownership is to be permanent. Now when this unification comes what is to be done with our railroads? That question not only will arise; it has arisen and is before us.

Two things should be kept in view in all discussions of a transportation situation; rates and service. New England is a transportation unit and I have always felt that rates in all portions of New England should be the same. Just as the transportation charge upon the branch lines ought to be the same as that upon the main line, so the charge upon the thin line in a section like New England should be no higher than that upon the more dense line. The whole territory is one industrial unit and each part should contribute to the other.

So long as the railroads of New England are independent it is impossible to accomplish this. Rates which are ample for the New Haven would not pay the cost of operation upon the Maine Central, as abundantly appears from the results of the last year which I gave you. If, however, these roads were merged into a single unit the same rate might be applied nor would the traffic of any section feel appreciably the added burden.

Now the plan most likely to secure for New England the same rates as prevail generally east of the Mississippi would be the consolidation of our New England lines with some strong east and west line. If, for example, the New Haven were turned over to the Pennsylvania and the Boston

& Maine were to become a part of the New York Central, that result would be very likely to follow.

Looking to the matter of service, there are arguments both ways. If the east-and-west consolidation plan were to be adopted, turning the New Haven over to the Pennsylvania, leaving the Boston & Albany with the New York Central as it is, and combining the Boston & Maine either with the New York Central or possibly with the Erie and the Delaware & Hudson, provided some system sufficiently strong could be worked out upon that basis, we should have two or three strong east and west lines competing for that business in which New England has the greatest interest; namely, the export business through the port of Boston and the transportation of raw materials, food and manufactured articles from and to the West.

Rail Failure Studies by the Bureau of Safety

THE REPORT of W. P. Borland, chief of the Bureau of Safety, Interstate Commerce Commission, for the year ending June 30, 1919, contains some comments on rail failures as the cause of accidents, with particular reference to crescent-shaped base fractures, shattering cracks in the center of the head, and injuries to the metal of the tread resulting from "wheel burning." This portion of the report is abstracted below:

Accident investigations involving the failure of materials, conducted during the year, and those in progress, have included the examination of rails which displayed different types of rupture, defects in track construction and failure due to equipment. Work of this class has reached that stage when it has become imperative to enter upon prolonged and exhaustive investigation of a number of basic, fundamental questions which are common causes and are responsible for a large number of rail failures.

A type of failure of common occurrence is presented in the display of crescent-shaped base fractures. Examples of this type are numerous, amounting to hundreds of instances. The origins of these breaks are practically all found in seamy metal located along the under side of the base of the rail. Some seams are very pronounced, while others are obscure. Service conditions, sooner or later, make the presence of these seams known, ultimately leading to rupture. Their rate of development is affected by track conditions, the weight of equipment and rates of speed being factors, while not unlikely the hardness of the rails in a chemical sense has an influence on the results.

Some rails have displayed crescent-shaped breaks only after a period of 10 or 12 years in the track, while others in a lesser number of months. The progressive character of these breaks is well illustrated in those rails which were a long time in the track before failure. While in many cases the seams are continuous, the fractures usually begin over ties, gradually working their way upward until they appear on the upper side of the flange, or perchance pieces of the flange are detached before the presence of the seams becomes otherwise known. Rails are weakened and square breaks result from seams which have partially developed in the base. Rail-failure statistics classify many broken rails as square breaks, which have their origins in longitudinal seams in the bases and which belong to the group of failures represented by crescent-shaped breaks.

Primitive tests of rails for acceptance under current specifications do not cover the feature of longitudinal seaminess, and even special tests fail to show the ultimate weaknesses which arise after a large number of repeated stresses have been received in the track. Rails fail in which the longitudinal seaminess is very obscure, a circumstance which is

disquieting since the original seam from its limited size presents peculiar difficulties of elimination.

Attention has recently been directed to a peculiar condition which prevails in the central zone of metal in the heads of some rails. A shattered state of the metal has been found, consisting of microscopic cracks, which become pronounced after pickling in hot acids. Similar but less frequent manifestation have been witnessed in the steel at the junction of the web and the base of the rail. These short shattering cracks, which extend lengthwise, crosswise and oblique to the direction of rolling, contain between their faces no foreign inclusion, nor do the cracks in all cases follow grain boundaries, but frequently pass through the grains as well as around them. The cause for their occurrence has not been ascertained, nor has it been determined at what stage or stages in the fabrication of the rail they make their appearance. One example may be mentioned, however; a finished rail was heated and quickly but not suddenly quenched, whereupon when subsequently pickled in hot acid short shattering cracks were displayed in the center of the head. In this case the cracks were therefore thermal ones.

Rails from the track have furnished examples of shattered heads, and new rails which have not been in service also have displayed them. A number of both new and old rails have been examined in this investigation. Up to the present time, rails with shattered heads have been found among those of the harder grades of steel; softer rails and those of early domestic and foreign manufacture have not displayed them.

The shattered zones have been found prevalent in rails which failed in the track, due to the presence of transverse fissures. Incipient cracks would be expected to promote the formation of transverse fissures, at least when oriented in the plane in which transverse fissures are developed. The discovery of shattered zones in the heads of rails may lead to an explanation of the proneness reported in rails of certain heats which display transverse fissures although laid in widely separated and remote parts of the track. It would not be proper, however, to hold out the hope that shattered heads alone lead to the formation of transverse fissures, since there are examples of such in otherwise intact metal. The considerable number of shattered cracks present in a short section of rail introduces a selective feature in conditions of service in locating the origin of a transverse fissure. It would appear that the formation of split heads would also be promoted by the presence of the shattered cracks, many of which are disposed parallel to the length of the rail.

Still another matter of importance has been brought forward upon which investigative work is in progress. This subject pertains to the failure of rails caused by "wheel burning" so-called—that is, the scoring and hardening of a layer of metal at the running surface of the head. The slipping of the driving wheels of the engine in starting a train causes the scoring. It is attended with local heating of the top of the head, intense heating as the sparks emitted indicate. The rapid abstraction of heat, by conductivity of the mass of metal of the head next below, results in the hardening of the surface metal. The depth of penetration of this hardened zone is not great, but this portion of the head is left in a very hard and very brittle state. Derailments result from the fracture of rails thus affected, the incipient points of rupture being located in or adjacent to the hardened metal.

While rail failures of this kind seem to admit of ready explanation, nevertheless, when critically considered and taken from a metallurgical point of view, they involve questions upon which further information than now available is demanded. The fractured surfaces of rails failing in this manner show fractures of tension, with origins at the hardened zones. But it has been found that the scored and hardened metal is in a state of internal compression. As such,

the metal in compression virtually should have a strengthening influence. However, if the heating results in the formation of thermal cracks in the hardened metal a weakening effect is produced. Two influences are thus recognized, the tendencies of which are in opposition to each other.

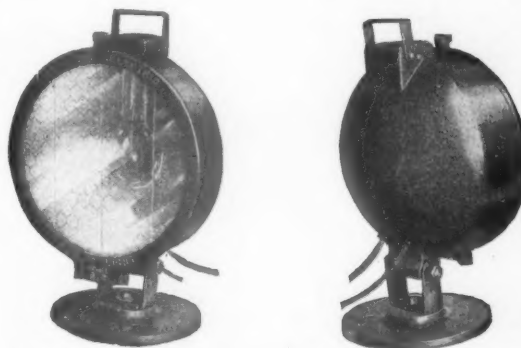
Owing to the large number of scored rails in service, as there is hardly a station in the country at which there are not examples of this kind in some degree, it becomes a matter of importance to acquire data upon these phenomena. It is an obscure question to define, if possible to do so, when rails with such surface conditions have reached a stage of danger. This subject is also one upon which data are being acquired in connection with accidents now under investigation.

Portable Utility Light

A NEW TYPE OF LIGHT for highly localized lighting has recently been placed on the market by the Western Electric Company. This light is for use at close ranges where the light is to be located at distances not greater than 125 feet from the object or surface to be illuminated. With the light operating on a 100-foot throw, a 100-foot spread is obtained at an angle of 60 degrees.

It is claimed that the unit gives a smooth white light without gleam or glare. A hammered glass reflector is used in conjunction with a 200-watt Type C lamp. The unit is of rugged construction and will withstand rough usage.

The hammered glass reflector is spring suspended in a one-piece cast-iron housing. The housing is closed by a wire glass front, which is fitted into a recessed cast-iron ring. This forms a door which is hinged at the bottom and secured by



Front and Rear Views of the Portable Light

a hand latch, thus affording easy access to the interior of the housing. The recessing in the ring makes the interior of the housing weather-proof.

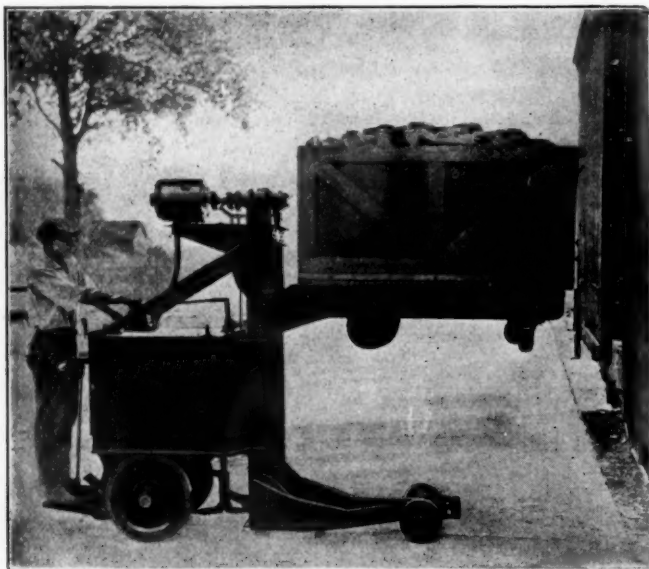
The lighting unit is furnished in either a black or gray weather-proof enamel finish. It is 9¼ in. high and weighs approximately 30 lb. The base is 9 in. in diameter, giving the light stability when mounted on a flat horizontal surface. The unit can also be mounted on either vertical or flat surfaces, such as walls, poles or roofs, by virtue of a heavy universal joint which fastens the housing to the base. All adjustments can be made without the use of tools.

This type of light has a wide range of applications. In railroad work it can be used for lighting transfer tables, coaling stations, inspection pits, loading platforms, cranes, roundhouses and drawbridges. On marine work it can be used for lighting docks, dredges, slips, loading operations, canal locks, dry docks and pile drivers. Its industrial applications cover even a wider variety of uses, such as lighting shop yards, material yards, coal yards, well drilling, coal tipples, erecting shops, machine shops, tramways and inclines, conveyors and all kinds of emergency work.

High-lift Elevating Platform Truck

AN INDUSTRIAL TRUCK, which with its own power elevates the loads to sufficient heights to put the material in box cars or stock rooms without rehandling, has been developed by the Lakewood Engineering Company, Cleveland, Ohio. This new truck performs the functions of a tiering machine as well as those of a load-carrying storage battery truck, and is called the Tier-Lift truck. It can elevate a two-ton load to a maximum height of 76 in. or to any intermediate height.

It has always been customary to transport material by means of hand trucks or some kind of power-driven truck which acted as a carrier only, but with this method men are required to transfer and lift the loads, and even when cranes are available considerable manual labor is required to handle the material. The use of the Tier-Lift truck, however, releases the cranes from considerable work, gives a more flexible distribution system and reduces the waste of man-power. The



Tier-Lift Elevating Truck Made by the Lakewood Engineering Company.

height to which material can be piled economically is greatly increased and the storage capacity of a given floor doubled or tripled by the high lifting feature. The storing of material on skids to prevent rehandling in the storeroom is also made practical. Where the material is such that it can bear the weight of loads above, the loaded platforms can be piled on top of each other. The labor cost is thus reduced, material can be handled more quickly and storage capacity of the floor space is greatly increased. With the arrangement shown any loaded platform in the racks may be removed without disturbing the other loads, thus giving flexibility in the storeroom.

It is claimed that the four-wheel steer allows the truck to turn in a circle 92 in. in radius, thus permitting operation in narrow aisles or congested parts of the plants and giving easy entrance into box cars, small storerooms, etc. The same form of drive is used in this truck as in the Lakewood tractor. There are three speeds forward and three speeds reverse. The controller handle is conveniently located for operation for travel in either direction. The lifting mechanism is operated by means of a specially designed controller, with one speed in either direction. The lifting is done through two steel worm screws, a separate motor being used to supply the power.

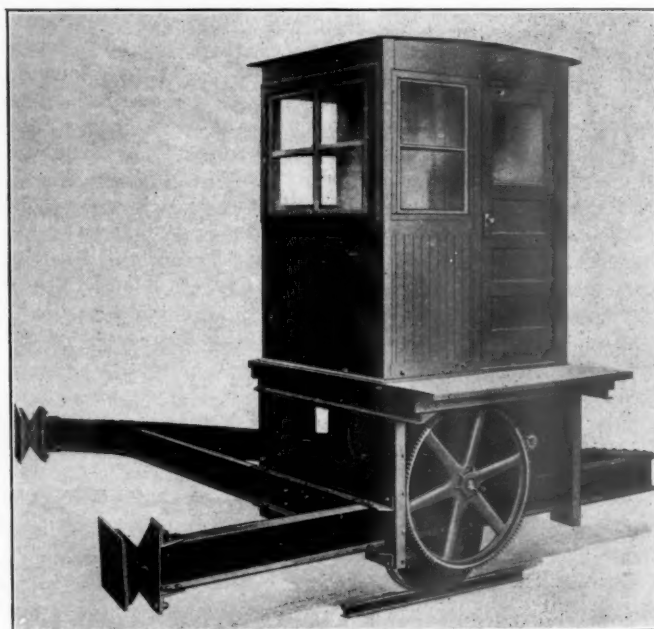
The load platform is carried by a cantilever type support

and the load is balanced over the carrying wheels. Ball bearings are used throughout, and by a special design the friction losses in elevating and lowering the load platform are greatly reduced. It is claimed that the truck is easy to operate, and its use will effect a considerable saving of both time and labor.

The Whiting Heavy Duty Turntable Tractor

THE WHITING FOUNDRY EQUIPMENT COMPANY, Harvey, Ill., has recently started manufacturing a heavy duty tractor for turntables of any capacity and pit-rail radius. The main frame of the tractor is V-shaped, built up of eye-beams and channels rigidly connected and attached to the turntable by steel hinges in such a manner as to prevent any vertical movement of the tractor when a locomotive is run on or off the table. The frame is extended outside the traction wheel in order that counterweights may be applied where additional tractive effort is required for heavy conditions.

The driving mechanism consists of a variable speed, reversible heavy duty type of motor located on the top of the structural frame driving two cast steel and forged steel pinions with cut teeth to a chilled iron traction wheel. Lubrication is accomplished through or by means of compression grease cups. The brake is asbestos lined and operates in either



The New Whiting Tractor

direction of rotation. The sandbox is located directly underneath the cabin floor and consists of a steel box with a vertical swinging valve connected to a sand agitator, both the valve and the agitator being operated from within the cab.

The tractor is equipped with an enclosed wood cab in which are located the controller which is the standard reversible drum type, the safety switch, the sanding control and the brakes. A trap door in the floor of the cab gives access to the machinery for inspection and oiling.

All wiring is in accordance with the Underwriters National Electric Code and is protected by iron conduits as far as possible. The current collector is arranged to be applied overhead or underneath the table and is enclosed in a water and steam proof housing.

General News Department

Compensation contracts have been executed by the Railroad Administration with the Mobile & Ohio for \$2,597,478 a year, and with the Alabama Great Southern for \$1,703,179.

The Pacific Railway Club, at its regular monthly meeting on February 12, discussed developments in traffic jurisprudence, the transportation activities of the United States Department of Agriculture, and whether or not the "street-men" will come back.

Frank McManamy, assistant director of the Division of operation of the United States Railroad Administration, will address the next meeting of the Western Railway Club on February 16 at Chicago, on "The National Agreement with the Shopmen."

Arthur L. Robinson, assistant to the general superintendent of the Wabash, with headquarters at St. Louis, Mo., has been appointed to a newly created position in which he will supervise the adjustment of controversies between the management and the employees.

The Norfolk Southern has been awarded the silver cup for the best safety record in the Southern region in the two weeks of November, when the National Railroad Accident Prevention drive was on. This is the cup which was offered by B. L. Winchell, regional director, before the drive was started. The delay in announcing the winner is due to the fact that another road, the Richmond, Fredericksburg & Potomac, was almost evenly tied with the Norfolk Southern. Each road reported three casualties, but the Richmond, Fredericksburg & Potomac had not quite so many employees in service.

William Carlisle, the notorious train bandit, by his sensational resumption of activities, seems to have made train robberies popular in the Far West. The latest incident of this nature occurred on the eastbound Union Pacific Overland Limited as the train was traveling between Fremont, Neb., and Omaha. A lone bandit, after imprisoning six mail clerks in closets or on the vestibules, rifled several registered mail pouches and escaped through a skylight as the train was nearing a junction near Omaha. Another similar robbery was recently reported on the Southern Pacific near Richmond, Cal.

The Senate on February 10 adopted a resolution introduced by Senator Frelinghuysen, directing the director general of railroads to inform the Senate as to the extent of his authority with respect to the distribution of coal, conferred upon him by order of the fuel administrator, the exercise of the powers so delegated at the present time and the agency or agencies under the control of the director general now exercising such powers. It is reported that the information is desired as a preliminary to an inquiry as to the power of the commission appointed to settle the question of wages of coal miners to increase the price of coal.

The Western Pacific recently applied to the Railroad Commission of California for authority to abandon a portion of its lines between Grizzly spur and Marsh spur, formerly part of the old Boca & Loyalton railroad. According to the application the company has in contemplation the construction of a new station at Beckwith, Cal., which will be built if the application for the track abandonment is granted by the commission. The Western Pacific has also applied for authority to abandon that portion of its road lying between Moy, Cal., and Carnegie. This trackage was originally a part of the line extending from Stockton, Cal., to Tulsa.

A statistical expert, at a salary of from \$3,600 to \$4,500, is called for by the United States Civil Service Commission,

applicants to be college graduates and with at least three years' experience in the analysis of railroad statistics. The Interstate Commerce Commission wants one man of this class, at \$4,200, to take charge of the compilation of monthly operating statistics, reported by the railroads, and to prepare monthly reviews of the results. Applicants must be 25 years old but not over 50. Forms for applications may be had from the Civil Service Boards in the principal cities, but applicants will not have to report for examination at any place.

Employees killed on the railroads of the United States, operated by the government, in the month of November, 1919, numbered 231 and employees injured 10,191, as compared with 359 killed and 11,248 injured in November, 1918. These are the totals shown in Bulletin No. 12, issued by the Safety Section, United States Railroad Administration. The bulletin gives the usual data concerning safety meetings held during November, which numbered 1,890. Manager A. F. Duffy reminds the supervisors of safety of the several railroads that the Washington office desires to complete its records, up to March 1, as soon as practicable after the termination of government operation.

The temperature of the water in Lake Champlain, between Grand Isle and North Hero, Vermont, on the morning of January 31, when some passengers were suddenly plunged into the lake by the derailment of the car in which they were riding, was not 38 degrees below zero; that was the temperature of the air, and the most that it is safe to say concerning the water is that its temperature was tending in that direction as rapidly as possible. This is the reply to a number of correspondents who have been disturbed by the statements concerning temperature which were made in the account of the derailment published last week, page 434. It is cheerfully admitted that the figure printed under the illustration was "greatly exaggerated."

Engineering Council has requested the Secretary of War to publish a report which has been made by an engineering board of review on the work done by the Construction Division of the United States Army under the severe handicaps of war conditions. This board of review, consisting of Francis Blossom, of Sanderson & Porter, New York; Charles A. Morse, chief engineer, Chicago, Rock Island & Pacific, Chicago, and W. Sanders Davies, public accountant of New York, was appointed in July, 1918. Its report analyzes the subject in much detail and is said to contain information of great technical value which Engineering Council desires be made public because of its official character and its authoritative review of the greatest aggregation of engineering activities that the world has ever seen.

A conference of representatives of Engineering Council, the joint conference committee of the four national engineering societies, and of the trustees of the United Engineering Society, was held in New York on January 23, to consider how the welfare activities of American engineers, now being conducted by Engineering Council, shall be continued until the organization recommended by the Joint Conference Committee shall become effective (if adopted by these societies). Resolutions were adopted recommending that the amount contributed to Engineering Council by each of the four founder societies should be increased from \$3,000 to \$5,000 for 1920 and by the American Society for Testing Materials from \$600 to \$1,000. It was further recommended to the five societies composing Engineering Council that the members of these societies be appealed to for contributions of two dollars per capita for the support of the welfare work of

Engineering Council. It is planned to call a conference of representatives of national, local, state and regional engineering organizations, to perfect the comprehensive organization, to be held in Chicago in April.

The Illinois Manufacturers' Association has recently issued several circulars urging its members to take a more active part in advocating the inclusion of certain clauses in the railroad legislation to be adopted by Congress. At the annual meeting of the association held at Chicago on January 9, resolutions were unanimously adopted urging that the Senate and House of Representatives conferees agree on legislation which will assure a net operating income of not less than five and one-half per cent on the combined values of the railroads in each classification territory and which will provide a tribunal to settle all disputes as to wages and working conditions, making it unlawful for two or more employees of the roads to conspire to quit the employment for the purpose of compelling the railroads to change wages or terms of employment. Sometime later, in a circular entitled "Headed for the Rocks," the association stated that, "A precarious situation exists in Washington in reference to the pending legislation having to do with returning of railroads to their owners. The only solid phalanx is that representing the brotherhoods." The circular therefore urged members of the association to wire their representatives in the Senate and House, and urged them to use all their influence with the conferees to bring about an agreement that will assure a net income of not less than five and one-half per cent.

The extensive snowstorm of February 5 and 6 in New York, Pennsylvania and New England, caused a general paralysis of freight traffic on nearly all the railroads and innumerable delays of passenger trains. The insufficiency of the shoveling forces made it necessary to call upon freight handlers for this work at Utica, N. Y., and other places. In Massachusetts some large industries, partly because of delays of freight, sent their employees to help the railroads clear away snow. Embargoes already in effect, together with delay forced by the storm, resulted in short supplies of food and fuel at a number of New England towns. Except on parts of the New York, New Haven & Hartford passenger trains had resumed nearly normal operations by Sunday, the 8th, though through trains from the west continued to run very late. The New Haven road, in southeastern Massachusetts, reported as late as Monday, the 9th, that only one-third of its regular trains were running. On the Midland division 50 per cent of the service had been restored. Branch lines were blocked by numerous derailments and main lines suffered from the same cause. This necessitated single-track operation on many sections, entailing long delays. In restoring facilities the New Haven road gave first attention to long-distance passenger, and Boston papers reported on Tuesday, the 10th, that "within the five-mile zone" no suburban service was being given. This district is served by the Boston Elevated. Braintree, ten miles from Boston, was the first stop for nearly all trains and towns between there and Boston complained that they had had "no passenger service for six days." On Tuesday a further fall of snow complicated matters.

New York Railroad Club

The February meeting of the New York Railroad Club will be held on Friday evening, the 20th, at 29 W. 39th St., New York City. The principal speakers will be James H. Hustis, president of the Boston & Maine and L. F. Loree, president of the Delaware and Hudson, and the subject for discussion will be the question of how the railroads shall conduct themselves when they are returned to private operation.

Southern Pacific Sanitary Inspector

W. B. Scott, federal manager of the Southern Pacific, the San Antonio & Aransas Pass, the San Antonio, Uvalde & Gulf and the Trinity & Brazos Valley, has appointed a chief sanitary inspector, with headquarters at Houston, Tex., for

lines under his jurisdiction. The sanitary inspector will examine and supervise utilities used by the public. His authority will cover the personal inspection of food and of persons handling food on dining cars and boarding cars and in eating stations, both to see that the foods are pure and that patrons shall not incur risk of infection of any character. The sanitary inspector's work will also cover an examination of all cars and all facilities used by the public and by employees, as well as stations, warehouses and shops, with a view of removing possible contamination and of conforming to the laws of health and comfort.

Telegraph and Telephone Division

Spring Meeting Called Off

The Telegraph and Telephone Division of the American Railroad Association will not hold a spring meeting at St. Louis, Mo., on March 30, 31 and April 1, as was announced in the December 26 issue of the *Railway Age*, on page 1233. A circular under date of January 21 was sent out by J. F. Caskey, chairman of the T. & T. Division A. R. A., and superintendent telegraph, Lehigh Valley, saying that in order to conserve the best interests of the division the Committee of Direction has decided not to hold the spring meeting. The fall session will be held on September 22, 23, 24. Formal notice covering the place of this meeting, which is the annual meeting, will be sent out later.

Army Port Terminals

The Secretary of War has announced the appointment of an advisory board to act for the War Department in an advisory capacity on all matters connected with the future use for commercial purposes of the new army port terminals. The department desires to make the best possible use of these facilities with a view to assisting in the upbuilding of the American merchant marine. The terminals owned by the department are located at Boston, New York, Port of Newark, Philadelphia, Norfolk, Charleston and New Orleans. The board includes T. C. Powell, who has just resigned as director of the Division of Capital Expenditures of the Railroad Administration, to become vice-president of the Erie; R. C. MacElwee, first assistant director of the Bureau of Foreign and Domestic Commerce, Department of Commerce; E. T. Chamberlain, United States Commissioner of Navigation; H. B. Walker, president of the Old Dominion Steamship Company, and Brigadier-General Frank T. Hines, chief of transportation service of the War Department.

Western Association of Short Line Railroads

Delegates to the annual meeting of the Western Association of Short Line Railroads, which was held at San Francisco, Cal., on Dec. 4, elected the following as members of the Board of Directors; D. M. Swobe, vice-president and traffic manager, McCloud River Railroad Company, San Francisco; L. G. Cannon, vice-president and general manager Nevada Northern Railway Company, East Ely, Nev.; George W. Scott, president, Yreka Railway Company, San Francisco; A. M. Ardery, vice-president and general manager, Virginia & Truckee Railway Company, Carson City, Nev.; Clarence M. Oddie, general counsel and secretary of the association, San Francisco; D. C. Eccles, president, Sumpter Valley Railroad Company, Ogden, Utah; Guy W. Talbot, president, Walla Walla Valley Railway Company, Portland, Ore.; George F. Detrick, president, Sacramento Northern Railway Company, San Francisco; O. W. Lehmer, general manager, Yosemite Valley Railway Company, Merced, Cal.; C. N. Hamlin, general manager, Sierra Railway Company of California, Jamestown, Cal.; Charles T. Bliss, general manager, Lake Tahoe Railway & Transportation Company, San Francisco; F. C. White, president and general manager, California Western Railroad & Navigation Company, Ft. Bragg, Cal., and M. W. Cooley, general manager, Uintah Railway Company, Mack, Col. The report of this election in the *Railway Age* of January 9, page 208, was in error in including the names of S. H. Smith,

traffic manager, Sierra Railway Company of California; R. K. Minson, general freight and passenger agent, Arizona & New Mexico, and D. M. Heigho, receiver, Pacific & Idaho Northern, and in omitting the names of Messrs. Eccles, Detrick, Lehmer, Hamblin, Bliss and White.

Electrical Workers Strike on St. Paul

Chicago, Milwaukee & St. Paul shopmen employed in the shops at Deer Lodge, Mont., recently engaged in an unauthorized strike because of a desire to force a decision in matters pending before the arbitration board at Washington.

As a direct result of the difficulty practically the whole electrified division of the St. Paul, extending from Harlowton, Mont., to Avery, Idaho, has been operated with great difficulty. Federal officers of the road, on hearing of the strike of the shopmen, requested them to await arbitration. However, the shopmen refused and 48 hours later, the electrical sub-station operators on practically the whole electrically-operated division walked out in sympathy with the shopmen. Electrical experts and officers of the electrified division took the places of the sub-station operators as far as possible and in many places on the division it was found necessary to use steam to maintain service. Director General Hines was immediately notified and after stating that the sub-station operators' strike was in violation of their contract, issued a 48-hour ultimatum, and the men acceded to his request and returned on February 5. Conditions have been restored to normal and it is believed the difficulty will be adjusted at Washington. Approximately 300 shopmen and 60 sub-station operators were involved. During the strike some through passengers were detoured over the Northern Pacific.

Grain Movement in the Central West

The effect of Director General Hines' recent order giving preference and priority to the furnishing of box cars for bulk grain loading from February 8 to February 18, inclusive, in central western states, is not as yet apparent. Daily reports of the number of cars suitable for grain loading, ordered, placed and loaded daily are to be made to the regional directors having jurisdiction over the states affected and it is believed that, when these reports have been compiled, the serious situation brought about by lack of cars suitable for the movement of this commodity during the past few weeks, will be greatly alleviated.

With the issuing of the order on February 5, many protests were registered by different industries in the middle west. Many of these protests were due to a misunderstanding of the order. The order, as issued by the director general, stated: "Because of the imperative necessity to provide a greater movement of bulk grain, the grain loading roads serving the states of Illinois, Minnesota, Montana, Missouri, Iowa, North Dakota, South Dakota, Nebraska, Oklahoma, Colorado, Wisconsin, Kansas, Arkansas and Texas will give preference and priority in the furnishing of box cars for bulk grain loading February 8 to 18, inclusive, after providing for the loading of l. c. l. merchandise, paper, wood pulp and sugar. This means that to the extent necessary to fill requirements, all available box car equipment suitable for the use in handling these commodities will be confined to this class of traffic." Representatives of several industries, especially those engaged in handling building materials, protested against the order, believing that it meant a general embargo upon the shipment of all freight. The order was later explained as applying only to cars suitable for grain loading, and would not greatly affect the movement of building materials and similar commodities.

The Hudson Bay Railway

More than a quarter of a century ago the desire was expressed in public quarters that communication be established with Hudson Bay. Saskatoon, Edmonton and Calgary joined with Winnipeg in the demand for a shorter outlet for western grain. Finally, in 1908, location work was begun, and in 1911 the railway was already under construction. After the lapse

of nine years, the railway is still uncompleted. From The Pas to the second crossing of the Nelson River at Kettle Rapids, 332 miles, the track is laid and ballasted. For the remaining 92 miles to Port Nelson the grading is completed. Over \$13,500,000 has been expended on the railway and over \$6,000,000 on the harbor improvements at Port Nelson. It is estimated that the work on railway and harbor can be completed at an expenditure of eleven millions. During the last three years little work has been done either on railway or harbor improvements. As in many other business undertakings, success or failure can be determined only by the actual operation of the project. The indications are in favor of the new route providing an outlet for thirty million bushels of western wheat at a smaller cost than by the already completed route to the eastern seaboard. On these indications the country has already invested over thirteen millions. The time has come when further delay should not be permitted to jeopardize the expenditures which have already been made on this route.

The people of Manitoba have a special interest in the territory which was acquired by the Province in 1912. The marketed production for the last fiscal year from the resources of Northern Manitoba—copper, silver, gold, fish, timber, hay, livestock and fur—was three and a half millions. The stimulus which the railway, in its half completed form and with a fortnightly service, has given to production, can be traced in practically all the items enumerated. When the railway reaches the Bay it will throw open a large new area for investigation and financial enterprise. The indispensable tool for production in northern territory is the railway.—Manitoba Free Press.

Railroad Administration's Output

of Speeches—Three Millions

An accomplishment of the Railroad Administration not heretofore mentioned was made public the other day by Senator Smoot, of Utah, who is conducting a campaign for a curtailment of the use of print paper by government departments. According to a table put into the Congressional Record by the Senator, the Railroad Administration stood second among government departments in the output of speeches, having been exceeded only by the Treasury Department. During the period covered by the report, July 1, 1916, to September 15, 1919, the number of speeches printed at the Government Printing Office and charged to departmental appropriations, not including speeches of Congressmen, was 30,144,362, and their estimated weight was 894,101 pounds; estimated cost, \$109,066. This Senator Smoot declared to be "a wicked waste," and he used up some \$240 worth of space in the Congressional Record to elaborate upon it.

The Treasury Department led in the output of speeches, with a total of 25,066,000 lbs., of which nearly all—24,058,000 lbs.—was credited to W. G. McAdoo. Practically all were Liberty loan speeches, including an address to railway employees, of which 2,200,000 copies were printed. The Railroad Administration was credited with 3,055,500 copies, weighing 29,000 lbs., the cost of which represented, however, an addition of only \$2,410 to the \$600,000,000 or \$700,000,000 Railroad Administration's deficit. These included 1,000,000 copies of Mr. McAdoo's address at Altoona, Pa., on September 12, 1918; 2,000,000 copies of "A Life Sentence," by Rev. J. F. Weinman; 15,000 copies of Charles N. Rambo's address before the Railroad Fire Protection Association, 15,000 of Frank McManamy's address before the New York Railroad Club, 5,000 of H. W. Belknap's address before the National Safety Council, and 10,000 each of two speeches and 500 of another by Walker D. Hines. The executive office came third in the list with a total of 1,163,862 copies, of which all but 40,000 were speeches by the President. These were heavier than the railroad speeches, weighing 79,497 lbs. None of the other departments were in the million-copy class and Mr. McAdoo and the Rev. J. F. Weinman were the only ones in the list who had as many as a million copies of a single

speech printed. Mr. McAdoo's Liberty loan speeches were given a circulation of from 1,000 to 6,500,000 copies each.

Senator Smoot has threatened to compile a similar table on Congressional speeches and some day may produce figures on the time, paper and expense required of the Railroad Administration and the Interstate Commerce Commission, as well as other departments, in conducting investigations in response to Senate resolutions, which are frequently put through by "unanimous consent," because no one objects, and often require a formal investigation when the only information really desired could be obtained by an inquiry over the telephone.

Pennsylvania Planning for Changes in Organization

The railway companies generally are giving careful consideration to the question of what changes should be made in their organizations before the railways are returned to private operation. Among the companies that are considering important changes is the Pennsylvania Railroad Company.

The Pennsylvania is considering important changes, not only because of the approaching termination of federal control, but also because about two years ago the parent company resumed direct operation of its leased lines west of Pittsburgh, reaching Chicago and the Great Lakes. Since then there have been many changes in the personnel of the organization caused by retirements on account of an age limit of 65 or 70 years having been reached, and other vacancies being caused owing to deaths or resignations. The management, therefore, has found it necessary to review the entire field from beginning to end.

The board of directors, we are told, in considering the organization changes needed, is especially keeping in mind, first, the necessity of furnishing the best possible service to the public; second, the necessity of making the best possible use of plant and equipment, which now represent an investment exceeding \$2,000,000,000; third, the necessity of securing closer relations with employees so that their wages and working conditions and efficiency may have proper supervision and attention, and for the necessity of keeping in close touch with the public so that relations with the public may be made the best practicable. The Pennsylvania has, of course, the largest freight and passenger traffic of any railroad system in this country, or indeed, in the world; a traffic which is not only very large, but among the densest, and therefore among the most difficult to handle.

One of the principal suggestions under consideration is that instead of concentrating the entire management at Broad Street Station, Philadelphia, there shall be created several district or executive vice-presidents, to be located at Chicago, St. Louis, Pittsburgh, Philadelphia, and perhaps other points, and that the powers of these vice-presidents in dealing with the public, the employees and the general operation of the property shall correspond to those of a president of a railroad company. Each of these vice-presidents would have a complete staff of officers representing all departments—transportation, traffic, accounting, treasury, and civil and mechanical engineering. The vice-presidents and their staffs would carry out the policies laid down by the directors, the president and administrative vice-presidents at the Broad Street Station in Philadelphia, who would supervise the new organization and further a financial policy that would strengthen the company and its employees. This should insure prompt decisions on all matters affecting the public.

The Pennsylvania management displays no pessimism as to the future of railroads, provided reasonable legislation is enacted. Its great desire in resuming the operation of its system is to get its men to render the best practicable public service, and also to expand its facilities and equipment, provided financial conditions will justify. In short, the management desires to resume the policy that for 75 years secured high physical standard and service, fair dividends to the stockholders and a very efficient organization. It feels that the railroad business will demand the best brains in the country for its successful direction.

Traffic News

Norman W. Secor, traffic manager of the Olds Motor Works, Lansing, Mich., has been elected president of the newly-organized traffic club of Lansing.

A. B. Weyant, of the Michigan Tanning & Extract Company, Petoskey, Mich., has been promoted to traffic manager, succeeding J. W. Bottriell, who has resigned.

N. J. Miller, formerly chief clerk in the freight claim department of the Chicago & North Western at Chicago, has been appointed traffic manager of the Associated Fruit Company, Chicago.

The annual meeting of the Traffic Club of Milwaukee, Wis., was held on February 7 at Milwaukee. Henry A. Palmer, editor of the Traffic World, Chicago, and Milton W. Baer, of Milwaukee, addressed the meeting.

The Panama Railroad Steamship Line has bought from the United States Shipping Board four former German ships. These four vessels, aggregating 15,569 tons, were interned at Colon by their German owners at the beginning of the war.

At Palm Beach, Fla., on the night of the fourth of February twelve through trains from New York and Boston, composed mostly of sleeping cars, arrived within a few hours, all of them having been delayed by a flood in Georgia. Some of these trains were sixty hours behind time.

The Kansas City Southern has reopened its freight and passenger agency in the Marquette building, Chicago, to serve the Michigan, northern Indiana, northern Illinois, eastern Iowa, Wisconsin, and Minnesota territory. Henry Brown, general agent, has been placed in charge of the reopened office.

The Southern Pacific has reopened its Chicago traffic office in the Southern Pacific building, 35 West Jackson boulevard. The personnel of the new office will be the same as it was before the office was abolished, with C. L. McFaul, general agent of the freight and passenger department, and H. H. Gray, city passenger agent.

The Traffic Club of New England held its ninth annual banquet at the Copley-Plaza Hotel, Boston, Mass., on February 10. The speakers for the evening were Gerrit Fort, recently elected vice-president in charge of traffic of the Boston & Maine, and T. C. Powell, director of the Division of Capital Expenditures of the Railroad Administration.

The Southern Pacific announces in California that the 4,000 new refrigerator cars recently ordered by the Pacific Fruit Express Company will be ready, most of them, in time for the autumn shipments of fruit this year. The Pacific Fruit Express Company has now in service about 15,000 refrigerator cars, so that a total of 19,000 will be available in the fall. One thousand of these cars will be built in California by the shops of the Pacific Fruit Express Company at Roseville and at Los Angeles.

A resolution was introduced in the Senate on February 9 by Senator Gronna to instruct the committee on agriculture and forestry to investigate the alleged lack of supply and failure to supply an adequate number of stock cars and cars for transporting grain and other farm products during the period of government operation of railroads, and also the charges of wilful interference by certain officials of the Railroad Administration with the successful operation of the railroads by the government. Senator King objected to the resolution unless the investigation were to be made by the committee on interstate commerce and its consideration, therefore, was postponed until the following day.

The Board of Railway Commissioners for Canada has been appealed to by traffic representatives of Canadian railways to postpone its order issued in August, 1919, instructing railways to adopt joint tariffs whereby freight may be shipped over one or more lines and compelling the publication of these tariffs. The order was issued after a report had been made by James Hardwell, chief traffic officer of the board, recommending that such action be taken. Representatives of the Canadian railways have asked for a rehearing of the whole matter on the ground that the coming amalgamation of the Grand Trunk with the Canadian National Railways altered the situation and that the order had been issued without all parties having been given full opportunity to investigate the move thoroughly.

Because of the imperative necessity to provide greater movement of bulk grain, the grain loading railroads serving the states of Illinois, Minnesota, Montana, Missouri, Iowa, North Dakota, South Dakota, Nebraska, Oklahoma, Colorado, Wisconsin, Kansas, Arkansas and Texas have been given instructions by the Railroad Administration to give preference and priority in the furnishing of box cars for bulk grain loading from February 8 to 18 inclusive after providing for the loading of less than carload merchandise, print paper, wood pulp and sugar. This means that to the extent necessary to fill requirements all available box car equipment suitable for the use in handling these commodities will be confined to this class of traffic. Railroads have also been instructed to secure the full co-operation of grain dealers, farmers, commercial organizations and others interested in order that this special movement may be as successful as possible.

According to a report on overseas traffic for the week ended February 4, made to Director General Hines, there were 4,364 cars of commercial export freight received at North Atlantic ports, as against 2,572 cars for the same week in 1919. This shows an increase of 1,692 cars or 153 per cent for February 4, 1920, as against the corresponding period in 1919. Deliveries to ships during the same period increased 2,776 cars or 82 per cent. At South Atlantic and Gulf ports as of February 2, 1920, there were 11,760 cars of export freight on hand as against 11,668 cars on January 25, of the same year, an increase of 92 cars. On February 4, 1920, there were 8,290,638 bushels of grain stored in elevators at North Atlantic ports. There were received during the week 2,693,824 bushels, while 2,784,871 bushels were cleared. The total amount of grain in elevators at these ports represented 42 per cent of the total capacity. At South Atlantic and Gulf ports as of January 28, 1920, there were 5,637,410 bushels of grain on hand, representing 53.7 per cent of the total elevator capacity.

Liquors Not So Prominent

The Eighteenth Amendment to the Constitution of the United States will of course visit the local freight agent. Intoxicating liquors must still be recognized, for they may legally be transported for medicinal and other lawful purposes, but the tariffs will not hereafter treat these commodities with any excess of respect. The Division of Traffic of the Railroad Administration has issued an order authorizing the cancellation on 10 days' notice of all commodity rates or exceptions to classification now published on intoxicating liquors, such as brandy, whisky, rum, gin, beer, ale, porter and wine, under whatever terms they are now described in the tariffs, except that carload commodity rates on alcohol, denatured alcohol or wood alcohol shall not be canceled. The order provides that where commodity descriptions now include both intoxicating and non-intoxicating liquors—for example, a description including both beer and cereal beverages—the intoxicating liquors shall be eliminated from the description and the present rates continued on the non-intoxicating liquors.

The order does not cancel ratings provided on liquors in the regular classes—in the Consolidated Classification or in state classifications—and these ratings will hereafter apply on such shipments as may be made without violation of law.

Commission and Court News

Interstate Commerce Commission

Joseph Stewart, special assistant to the attorney general for the postmaster general, has filed a brief with the Interstate Commerce Commission against a motion filed on behalf of the short line railroads for additional findings and supplemental orders in the railway mail pay case.

Personnel of Commissions

Henry C. Stuart, former governor of Virginia, whose nomination for appointment as a member of the Interstate Commerce Commission, to succeed James S. Harlan, was sent to the Senate by the President on February 6. Governor Stuart sent a letter to the president on the following day declining the appointment. Governor Stuart was for a time a member of the Virginia State Corporation Commission. In his letter he expressed the opinion that he was not properly qualified for the office and did not wish to be tied down to public office. He learned of his nomination from the newspapers.

State Commissions

The Canadian Northern Pacific Railway Company has been granted authority to open its line from Sooke, B. C., to Victoria, about 25 miles, provided that the speed of trains approaching highway crossings shall not exceed 10 miles an hour.

The Board of Railway Commissioners for Canada has authorized the Canadian Northern temporarily to run trains over its MacRorie branch from Eston, Sask., westward about 20 miles to Glidden, subject to the condition that speed of trains shall not exceed 18 miles an hour.

Court News

Federal Control—Suits Against

Companies—Liability for Negligence

The North Dakota Supreme Court holds that General Order No. 50 is not warranted by the Rail Control Act of March 21, 1918, in so far as it purports to be applicable to causes of action already vested. Section 10 of the Act is held to authorize the bringing of actions against the carrier corporations during the period of federal control. The Director General is not authorized to appear and defend suits brought against the corporations. They, during the period of federal control, remain legal entities entirely capable of suing and being sued. The liability or non-liability of a carrier corporation for acts of alleged negligence occurring during the period of federal control is a judicial question to be determined by the courts. The question whether or not a carrier corporation may be liable for the negligence of an employee during the period of federal control is not decided.—*Macgregor v. Great Northern (N. Dak.)* 172 N. W. 841.

Commissions' Right to Alter and Fix Grain Rates

The Illinois Supreme Court has directed the reversal of an order of the Illinois Public Utilities Commission requiring the Cleveland, Cincinnati, Chicago & St. Louis, in connection with the Atchison, T. & S. F., the Chicago & Alton, Chicago & Eastern Illinois, Chicago, B. & Q., Rock Island, Illinois Central and Wabash, to establish joint rates for all grain moving in carload lots from certain points mentioned on the several divisions of the C. C. C. & St. Louis to Chicago. As the basis of the Commission's order on which these rates were established on complaint of the Chicago Board of Trade, the Commission had found "that the rates complained of are unjust and unreasonably

high." The court holds that in such cases the proof should show and the Commission should find, that the public convenience and necessity demanded, before the Commission is authorized to establish, a through route and joint rate, either because the rate charged is unjust, unreasonable, or excessive, or because there is no satisfactory through route or joint rate in existence. The convenience and necessity of the public are the controlling considerations in a hearing of this character, and the public to be considered is the producer of the grain and the consumer of it. There was no evidence in the record to support the jurisdictional fact that public convenience and necessity demand the establishment of through routes and joint rates, and no finding by the Commission in its order of that fact. Therefore, it was held the circuit court erred in confirming the Commission's order.—Public Utilities Commission v. Cleveland, C. C. & St. L., 288 Ill. 502, 123 N. E. 547.

Intrastate Storage Charges Paid Not Recoverable

Consignees sought in an action at law to recover "track storage" charges paid on intrastate shipments consigned to them in accordance with tariffs filed with the New York Public Service Commission. The plaintiffs had previously filed with the commission a complaint that the charges were unjust and unreasonable, and the commission held they were entitled to recover them on that ground. The railroad company refusing to repay, the action was brought. The New York Court of Appeals, affirming a judgment of the lower court, holds that there can be no recovery. Although the common law authorizes an action at law by the injured consignee to recover moneys paid, under protest or duress of goods, as exorbitant or unreasonable charges, the right of recovery may, under the laws of New York, differing from those of many other jurisdictions, be waived by voluntary payment. The State has the right, through the Public Service Commission, to prescribe reasonable charges for intrastate transportation and services, and sections 26, 40, 48 and 49 of the Public Service Commission Law do not authorize the commission to make an order allowing the recovery of "track storage" charges made by a railroad in accordance with tariffs duly filed with the commission. All the parties interested, shipper, consignee and carrier, are presumed to know and bound to act in conformity with tariff rates. Such rates existing at any time cannot be attacked in a common law action.—Murphy v. New York Central, 225 N. Y. 548, 122 N. E. 700.

Depot, Wharf and Transfer Facilities

In denying a writ of mandamus to compel the Atlantic Coast Line and the Clyde Steamship Co. to comply with an order of the Florida Railroad Commissioners to rebuild and repair the wharf adjacent to and lying immediately between the railroad's depot and the St. Johns river in Astor, Florida, the Florida Supreme Court holds that, in determining the validity and reasonableness of an order of the commissioners requiring wharf and depot facilities to be furnished, regard should be had for considerations that show whether the facilities may justly be required for the convenience and safety of the public to be served, and whether the expense to the carrier is so out of proportion to the advantages thereby afforded to the public, or so affects its earnings, as to impose an unlawful burden upon the carrier. Where such an order is shown by the admissions in the pleadings to be so unreasonable with reference to the past and present conditions affecting the matter as to unlawfully invade the carrier's property rights, the order should not be enforced by mandamus, particularly when it appears that the prospective growth of the carrier's business does not clearly warrant the requirements of the order. Orders of the railroad commissioners, requiring particular depot and transfer facilities to be furnished for the convenience, not for the safety, of patrons, will not be enforced by the court by mandamus when the burden to the carrier would be so out of proportion to the benefits to accrue to the public as to show the orders to be unreasonable and unjust.—State v. Atlantic Coast Line (Fla.) 81 So. 498.

Foreign Railway News

Railway fares in Austria, already several times those of before the war are to be taxed 30 per cent. This announcement was made by the government last week. It includes also charges on baggage.

Extensive reduction of Sunday traffic is contemplated in France, the government having laid before the Central Committee of Railways a proposition to suspend all freight trains from 7 o'clock Saturday evening until 8 o'clock Monday morning, and to run very few passenger trains on Sunday. The objects are to secure rest for the employees, greater safety for the public and economy in operating expenses and to save coal.

Disastrous Collision in France

Fifteen persons were killed and thirty injured in a butting collision reported from Dijon, France, on February 5. It occurred at Perrigny-sur-l'Ornon, about twenty-one miles east of Dijon. A standing freight train was run into by an express passenger train.

Electrification Is Being Considered

by the Tasmanian Railways

Electrification is being considered by the Tasmanian Railways. The Times Trade Supplement (London) says that when the Tasmanian Parliament considered the Government's proposal to build a railway from Hobart to the Huon, the appropriation of £4,000 for the survey of a route for a "steam or electric" railway was only passed on the condition that the survey should be for an electric railway.

Belgian State Railways Buy Locomotives

LONDON, England.

The Belgian State railways have placed orders for 150 locomotives with the American Sales Corporation, one-half of which will be built by the American Locomotive Company and one-half by the Baldwin Locomotive Works; also 200 have been ordered from Armstrong Whitworth & Co., of England, and 100 are to be built by Belgian locomotive builders. There remains an order for 50 more which is now under negotiation.

New Trans-Zambesia Railway

The Times Trade Supplement (London) says that the construction work on the Trans-Zambesia railway will be begun in April at the end of the summer rains. The junction with the Beira-Rhodesia line will be about 22 miles from Beira (not far from Fontesvilla) and the line will run thence almost due north to the Zambesi river. The grading will not be extensive. The new railway nowhere attains an altitude of more than 1,052 ft., and the ascent and descent on each side is gradual. This line will form part of the proposed through route from Cape Town to Lake Nyasa, via Bulawayo, Salisbury and Beira.

Australia Manufacturing Railway Supplies

Several Australian engineering firms have taken up the manufacture of railway supplies, and the Chief Commissioner for Railways, James Fraser, of New South Wales, has expressed complete satisfaction with the local products. He said that he had been pleased to give preference to Australian manufactures and he had not had to pay higher prices than for goods of the same quality from foreign sources. The New South Wales railway administration has been making axles, wheels and tires for both freight and passenger cars in its own shops, and shortly everything required for making a locomotive, with the exception of boiler plates and copper tubing and plates, will be made in Australia, and even the latter will be produced in Australia before long. Mr. Fraser said that he had been promised deliv-

ery next March of copper tubes by an Australian manufacturer, at a slightly lower figure than that for which he could get copper tubes abroad.

The New Zealand Government has placed a contract with an Australian shop for 20 express locomotives. This shop has already turned out over £300,000 worth of work to the complete satisfaction of the New Zealand railways.

English Railroads Rule Against American Purchases

LONDON, England.

Because of the very disadvantageous rate of exchange, directors of several of the English railroads have issued instructions that no purchases are to be made in America except where it is absolutely impossible to obtain the same products elsewhere. Lines are being drawn more closely day by day against purchases in America by the railways in all European countries, due to the great disparity in the value of money. Furthermore, the railways in every country are making, as never before, every attempt to make purchases within their own frontiers. This will have a serious effect on English business which relies to such a very great extent on its export business to balance the necessary imports.

London Underground Seeks Government Control

There was a statement issued a few days ago that the Underground Railway combine in London had requested the Ministry of Transport to take over the control of the roads, as it was found impossible to meet expenses; but the Ministry of Transport does not appear to be making any preparations to do so. The combine has deposited a private Parliamentary bill asking permission to increase fares on all of its lines. The companies controlled by this combine are the Metropolitan & District railway, the London Electric Railway, The London General Omnibus Company, the Central London railway, the City & South London railway, the M. E. T. Omnibus Company, the M. E. T. Tramways, the London United Tramways, the Gearless Bus Company and the Metropolitan Tramways. In other words, the combine controls all underground railways, street railways and motor bus lines in London.

It has been stated that the loss on the business of 1919 will amount to about £2,500,000, this in spite of the fact that the fares on all of these lines are materially higher than before the war. All earnings are pooled, and it is stated that of the deficit mentioned the motor bus service is responsible for about 75 per cent.

Italian Railway Strike

LONDON.

At 6 o'clock Tuesday morning, January 20, the Italian railways were crippled by a severe railway strike which extended from station masters down. From press reports it is stated that the demands of the railwaymen amount to an increase of 70,000,000 lire (\$14,000,000). The minimum wage for the lowest grade to be 1,000 lire (\$200) a month, which is an extremely high wage according to existing Italian standards. The government has offered a distribution of a bonus of 1,000,000 lire (\$200,000) which was rejected by the men's leaders. Every protection was being given to non-strikers, soldiers and voluntary workers, the stations being guarded by troops and patrols being placed along the line.

It has been stated that a large portion of the railwaymen did not favor the strike, but have been coerced by extremists and that the general public opinion is unsympathetic towards the strikers. Press despatches on the fifth day of the strike indicate that there is a gradual improvement in the service, but the situation in the North remains particularly serious. In Southern Italy and Sicily it has been stated that the strike is a failure.

The Central News despatch states that an express train having been stopped at a small station near Pisa, a number of travellers with revolvers ordered the strikers to continue the journey which they did. It has also been stated that there were several cases of firing on trains and in one instance a soldier was wounded.

An Exchange despatch states that automobile lines have been established to overcome the disorganized transportation facilities and that at Reggio 45 strikers were sentenced to various terms of imprisonment for threatening volunteers.

On January 26, six days after the strike was called, it was

stated that two trains were running daily between Rome and Milan and were operating practically on normal time. At that time the government seemed to be successfully resisting the demand of the strikers and the men were becoming discontented on account of the fact that the leaders stated that two days' strike would bring the government to their knees.

Mr. Vauclain Returns From France

Samuel M. Vauclain, president of the Baldwin Locomotive Works, Philadelphia, returned this week from a trip to France, during which he studied industrial conditions in that country. He tells the manufacturers of America that Europe will call both for raw materials and manufactured articles; but we must understand that liberal time must be given for payment. He does not believe that this country should make direct financial loans to Europe; he agrees with the statement recently issued by our Treasury Department, disapproving such a loan. France needs a great variety of raw materials and manufactured articles. Just now she is in great need of plumbing supplies. The entire country needs to be put on a sanitary basis and the people are determined to introduce the comforts and conveniences which are found in America. A leading Paris dealer in plumbing contracts has orders on his books amounting to millions of francs but cannot fill them because he cannot get the materials.

We, in America, should use our money, not to send abroad, but to stimulate industries which will make goods to be sent abroad. Mr. Vauclain thinks that European factories are rapidly getting in shape to resume business. He was struck with the rapidity with which the industries of France have absorbed the men discharged from the army.

Labor Situation in England

Supplementing the report regarding the adjustment of railwaymen's wages, there was published recently in the Railway Review, the official organ of the labor unions, the following resolutions of the National Union of Railwaymen regarding the acceptance of the wage settlement:

"That this conference, having heard the reply of the Government to our resolutions and the further explanations of the general secretary, while fully appreciating the inclusion of our Irish brothers and the offer for grades not originally included, also the proposals for meeting the hardships of those whose combined rates are higher than the proposed new standards, again reaffirm our belief that the only equitable method of standardization is by taking the highest maximum of each grade or group of grades, and while the only means to obtain this at present is by a general strike, recognize that such a course is unwise, and therefore decide to accept the settlement under protest, and instruct the general secretary to call a special general meeting immediately the final proposals for signalmen and other outstanding grades are completed.

"That this conference, after hearing the explanations upon a flat rate to each member affected, as against the actual amount for those members whose basic rate would be higher than the combined war wage and original rate, by the general secretary, decide to accept the flat rate."

TRANSPORT WORKERS DEMAND INCREASES

As a sequel to the railwaymen's demands in wages, the National Transport Workers' Federation issued on January 26, an application for an advance of 10 shillings a week in the wages of adult road transport workers, except tramway and omnibus drivers and conductors. Fourteen trade unions are affiliated with this Federation, which include about 120,000 workers. The demands affect particularly the drivers of horse drawn vehicles, steam wagons and commercial motor cars. Last August an advance of 4 shillings a week was obtained which brought the war wage up to 34 shillings a week.

MOULDERS RESUME WORK.

After a strike extending over several months, the iron founders, core makers and iron and steel dressers' union have voted to resume work on the employers' offer of an advance of 5 shillings a week. Although the union has officially accepted this settlement, there has been some difficulty in many sections to get the men to return to work.

Equipment and Supplies

Locomotives

THE LOUISVILLE & NASHVILLE is inquiring for 20 Mikado type locomotives.

THE KENTUCKY & TENNESSEE has ordered one 2-8-2 type locomotive from the Baldwin Locomotive Company.

THE CHICAGO GREAT WESTERN has ordered 10 Mikado type locomotives from the Baldwin Locomotive Works.

THE MYSORE STATE RAILWAYS (India) have ordered 5 2-6-4 type locomotives from the Baldwin Locomotive Works.

THE MINNEAPOLIS, ST. PAUL & SAULT STE MARIE has ordered 25 Mikado type locomotives from the American Locomotive Company.

THE CANADIAN PACIFIC is building 5, 2-10-2 type locomotives at its own shops. These are in addition to 10 recently completed in the same shops.

THE CANADIAN NATIONAL is negotiating with the Montreal works of the American Locomotive Company for the purchase of 25 locomotives.

THE FOUNDATION COMPANY, Woolworth building, New York, has ordered two 4-wheel saddle tank locomotives from the American Locomotive Company. These locomotives will have 16 in. by 24 in. cylinders.

THE TIENSIN-PUKOW (China) has ordered 20 Mikado type locomotives from the American Locomotive Company. These locomotives will have 20 in. by 28 in. cylinders and a total weight in working order of 194,000 lb.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for one second-hand Shay geared locomotive, to weigh 36 to 40 tons and for one second-hand 20 or 22-ton road locomotive.

THE MADRID, ZARAGOSSA & ALICANTE RAILWAY (Spain) has ordered 15 Pacific type locomotives from the American Locomotive Company. These locomotives will have 23 in. by 26 in. cylinders and a total weight in working order of 187,000 lb.

THE BOARD OF STATE HARBOR COMMISSIONERS, San Francisco, Cal., has ordered one 6-wheel switching locomotive from the American Locomotive Company. This locomotive will have 20 in. by 24 in. cylinders, and a total weight in working order of 106,000 lb.

THE UNITED FRUIT COMPANY has ordered 2 Consolidation type locomotives from the Baldwin Locomotive Works for use on its lines in Honduras. These locomotives will use oil for fuel and will have 17 in. by 20 in. cylinders and a total weight on drivers of 90,500 lb.

THE FLORIDA EAST COAST has ordered 10 Pacific and 2 six-wheel type locomotives from the American Locomotive Company. The Pacific type locomotives will have 22 in. by 26 in. cylinders and a total weight in working order of 204,500 lb., and the six-wheel type locomotives will have 20 in. by 26 in. cylinders and a total weight in working order of 160,000 lb.

THE DELAWARE, LACKAWANNA & WESTERN, reported in the *Railway Age* of January 30, as being in the market for 6 Pacific type locomotives, has ordered this equipment from the American Locomotive Company. These locomotives will have 25 in. by 28 in. cylinders and a total weight in working order of 300,000 lb.

THE TOLEDO TERMINAL RAILROAD has ordered 2 Consolidation type and 2 six-wheel switching locomotives from the American Locomotive Company. The Consolidation type locomotives will have 2 in. by 28 in. cylinders and a total weight in working order of 200,000 lb., and the six-wheel type will have 21 in. by 26 in. cylinders and a total weight in working order of 148,000 lb.

Freight Cars

HARLEY WOOLSEY & Co., Mahomet, Ill., are inquiring for two box cars.

THE ANDREWS STEEL COMPANY, Newport, Ky., is inquiring for one slag car.

THE CANADIAN PACIFIC is inquiring for from 1,000 to 2,000, 55-ton box cars.

THE CHESAPEAKE & OHIO plans to build from 25 to 50 cabooses in its own shops.

THE VERMONT MARBLE COMPANY, Proctor, Vt., is inquiring for one snow plow.

THE DANVILLE BRICK COMPANY, Danville, Ill., is inquiring for three steel dump cars.

DWIGHT P. ROBINSON & Co., New York, are inquiring for four bottom-dump coal cars.

THE DONNER STEEL COMPANY, Buffalo, N. Y., is inquiring for 20, 70-ton gondola cars.

THE SUN SHIPBUILDING COMPANY, Chester, Pa., is inquiring for ten, 50-ton flat cars.

THE UNION OIL COMPANY OF CALIFORNIA, Los Angeles, Cal., has purchased 150 tank cars.

THE SOUTH INDIA RAILWAYS COMPANY, London, Eng., is inquiring for eight timber trucks.

DE HUFF & HOPKINS, Philadelphia, Pa., are inquiring for one special car to transport a boiler.

THE HORNES ZOOLOGICAL ARENA COMPANY, Kansas City, Mo., is inquiring for flat and box cars.

THE BARBER ASPHALT PAVING COMPANY, Buffalo, N. Y., is inquiring for three special car bodies.

THE BRADFORD SUPPLY COMPANY, Bradford, Pa., is inquiring for 25 tank cars of 10,000 gal. capacity.

THE CLINTON SUGAR REFINING COMPANY, Clinton, Iowa, is inquiring for 25 tank cars of 8,000 gal. capacity.

THE SOUTH PORTO RICO COMPANY, New York, is inquiring for 24 rocker dump cars and 24 steel flat cars for export.

THE CHILE EXPLORATION COMPANY, New York, has ordered 35 oil tank cars from the Standard Steel Car Company.

THE NEWPORT ROLLING MILLS COMPANY, Newport, Ky., is inquiring for one, 75-ton gondola and one, 75-ton flat car.

THE FT. WAYNE & INDIANAPOLIS TRACTION COMPANY, Ft. Wayne, Ind., is inquiring for six, 30-ton, 40-ft. box car bodies.

FOX BROTHERS & Co., New York, have ordered 100 cane cars from the American Car & Foundry Company, for export to Cuba.

ROBERT H. HASSLER & Co., Indianapolis, Ind., have ordered one all-steel box car from the American Car & Foundry Company.

THE INDIANAPOLIS & CINCINNATI TRACTION COMPANY, Indianapolis, Ind., is inquiring for three stock cars and three, 36-ft. flat cars.

THE CUBA RAILROAD COMPANY, New York, has ordered fifty, 50-ton, 8,000-gal., tank cars from the American Car & Foundry Company.

DWIGHT P. ROBINSON & Co., 61 Broadway, New York, has ordered 3 steel hopper cars of 20-ton capacity from the Magor Car Company.

THE MAGNETIC PIGMENT COMPANY, New York, has ordered from the Pennsylvania Tank Car Company one acid tank car, of 100,000 lb. capacity.

THE UNITED FRUIT COMPANY has ordered from the Magor Car Company 36 banana cars of 10-ton capacity, and 15 cars of 5-ton capacity, for use on its lines in Jamaica.

A. E. STALEY MANUFACTURING COMPANY, Decatur, Ill., has ordered from the Pennsylvania Tank Car Company, 60, 81,050-gal. capacity tank cars, equipped with steam heating coils.

THE BALDWIN LOCOMOTIVE WORKS, Philadelphia, Pa., has ordered fifteen, four-wheel cane cars, with hand brakes, for export to Cuba, from the American Car & Foundry Company.

THE WEST INDIA SUGAR FINANCE CORPORATION, New York, has ordered 200 cane cars and 25 flat cars, all of 20-ton capacity from the Magor Car Company. These cars are for export for account of the Atlantic Fruit Company.

Passenger Cars

THE HORNES ZOOLOGICAL ARENA COMPANY, Kansas City, Mo., is inquiring for passenger cars.

R. J. DORN & Co., New York, are inquiring for one railroad motor car for export to Cuba.

THE NORWEGIAN STATE RAILWAY is negotiating with the St. Louis Car Company for the purchase of passenger train equipment.

THE PRESTOLITE COMPANY, Indianapolis, Ind., is inquiring for ten standard gage electric passenger cars, including four motor cars and six trailers.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for one second-hand 36 ft., or shorter, passenger coach.

THE DELAWARE, LACKAWANNA & WESTERN, reported in the *Railway Age* of January 16, as inquiring for 35 suburban coaches, has ordered this equipment from the Pullman Company.

Iron and Steel

THE NORFOLK & WESTERN is in the market for about 1,000 tons of fabricated steel, for use on a bridge over the New river in Virginia.

THE CANADIAN PACIFIC has ordered 140,000 tons of 85-lb. steel rails from the Algoma Steel Corporation, Sault Ste. Marie, Ont., for delivery this year.

Machinery and Tools

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for one or two wheel presses of 150 tons capacity, and about 39 in. between strain bars.

Miscellaneous

THE OHIO CITIES GAS COMPANY, Columbus, Ohio, is inquiring for a small, gasoline motor, inspection car.

THE MISSOURI, KANSAS & TEXAS has ordered two highway crossing signals from the A. G. A. Railway Light & Signal Company, Elizabeth, N. J.

Signaling

THE CANADIAN PACIFIC has ordered from the Union Switch and Signal Company a 16-lever Saxby & Farmer interlocking machine, to be installed near Watson, Sask.; also a similar machine for Russell, Man.

THE PHILADELPHIA & READING has awarded a contract to the Union Switch & Signal Company, Swissvale, Pa., for the installation of automatic block signals on four tracks between Myers-town, Pa., and Lebanon, six miles. This installation will operate on alternating current and there will be 18 blocks. All main line crossovers will be equipped with switch indicators. This road has also awarded a contract to the same company for the installation of a type "F" electric interlocking plant at Myerstown.

Supply Trade News

Theodore L. Dodd & Co., Chicago, have been appointed district sales representatives for the Titusville Forge Company, Titusville, Pa.

The Thompson Electric Company, Cleveland, Ohio, announces that it has moved into more commodious quarters at 226 St. Clair avenue, N. E.

Paul W. Shale, associated with the sales and cost departments of the Brier Hill Steel Company, Youngstown, Ohio, has been promoted to secretary to the president.

F. H. Myers, assistant secretary of the American Association of Engineers, Chicago, has been appointed sales engineer of the Certain-teed Products Corp., Chicago.

Hugh Brennan, formerly president of the Dooley-Brennan Agency, Chicago, has been appointed manager of the advertising department of the Imperial Belting Company, Chicago.

Alexander MacDonald Graver, vice-president of the Graver Corp., East Chicago, Ind., died at his home in Chicago on January 31. Mr. Graver was one of five brothers who control the Graver Corp., formerly the Graver Tank Works. He was born at Pittsburgh, Pa., on May 15, 1883, and was educated at the University of Michigan, from which institution he graduated in 1905.



A. M. Graver

He then entered the engineering department of the Wm. Graver Tank Works, where he had charge of the electrical and steam equipment and remodeled the company's manufacturing plant. In 1908 he entered the purchasing department and soon after assumed charge of the purchase of steel plates. From

1910 to the time of his death, Mr. Graver was identified with the sales department of the organization and for the past two years has been virtually sales manager, although holding the title of vice-president of the organization.

C. B. Ferry, vice-president of the Chicago, Milwaukee & St. Paul, has been elected a director of the Associated Welding Companies, Inc., New York City, a corporation formed recently by thirteen electric welding companies.

The Sherritt & Stoer Company, Inc., announces the opening of new offices, storeroom and warehouse at 2006 and 2008 Market street, Philadelphia, where it will maintain a permanent exhibition of machine tools, railway and machine shop equipment.

J. F. Surridge, who served two years as major with the 35th Engineers, and was recently discharged from the United States Army, has been appointed superintendent of the car department of the American Steel Company of Cuba, at Havana, Cuba, effective December 5, 1919.

The Ball Lumber Company, Eugene, Ore., successor to the Valley Tie & Lumber Company, Eugene, has perfected plans to expand its service and business and has appointed R. J. Menz, identified for many years with the marketing of Pacific Coast lumber products in the Portland, Ore., and Seattle, Wash., districts, manager and sales manager.

Westinghouse Air Brake Company

Joseph R. Ellicott, who on January 1, 1920, retired as eastern manager of the Westinghouse Air Brake Company, but has been retained by the company, in a consulting capacity, as was briefly noted in our issue of January 16, page 276, was born in Batavia, N. Y., and received his education in the public schools of Grand Rapids, Mich. He made his start in business with the First National Bank of that city, and later became cashier. He subsequently served on the Chicago & North Western Railway, going from that road into the manufacturing business with the Ajax Forge Company, Chicago. He represented the Griffin Wheel & Foundry Company, serving several years as eastern sales manager. He then left the wheel business and started in the railway supply business for himself. He organized and directed the General Agency Company. In 1898 he became general man-

work. In 1913 he was made assistant eastern manager of the Westinghouse Air Brake Company, and Westinghouse Traction Brake Company. On January 1, 1920, Mr. Ellicott was made eastern manager of both companies, succeeding Joseph R. Ellicott, retired. C. R. Ellicott has been actively associated for a number of years with the activities of the Manufacturers' Association in connection with the American Electric Railway Association in the east.

Robert Burgess has been promoted to southeastern manager, with office in Washington, D. C. He was born in New Haven, Conn., and attended public school there, graduating from grammar and high schools. He began railway service with the Louisville & Nashville under the late Mr. Pulaski Leeds, as machinist apprentice. On completion of his apprenticeship course he continued with the company in the various capacities of air brake repairman, round house foreman, locomotive fireman and engineer, and general air brake



Charles R. Ellicott



Jas. R. Ellicott



Robt. Burgess



C. H. Beck



A. K. Hohmyer



W. G. Kaylor



John B. Wright

ager of the Standard Air Brake Company. He negotiated control of this company to the Westinghouse Air Brake Company in 1901, and since that time was general manager of the Westinghouse Air Brake Company. Mr. Ellicott was president of the American Electric Railway Association for several years, having always been closely identified with the interests of that organization.

Charles R. Ellicott has been promoted to eastern manager, at New York. He was born in Chicago on November 13, 1881. He received his early education in the public schools of New York, and was graduated from Yale-Sheffield School in 1902. The same year he entered the employ of the Westinghouse Air Brake Company, at Wilmerding, Pa., as special apprentice. After serving two years in the engineering and commercial departments, he was made representative in the New York office, covering both commercial and engineering

inspector. He joined the Westinghouse Air Brake Company organization in 1893 as assistant instructor in the company's air brake instruction car. In 1896 he was assigned to the southern district, with headquarters at Atlanta, Ga., and for several years at Richmond, Va. He has since that time represented the company continuously in that district as mechanical inspector and commercial representative.

Carl H. Beck has been appointed assistant eastern manager at New York. He was born in Butler, Pa., graduated with the class of 1905 in mechanical engineering from Pennsylvania State College. The same year he entered the special apprenticeship course prescribed by the Westinghouse Air Brake Company. He was a specialist on the introduction of the ET Locomotive brake equipment, personally superintending the installation of this equipment on some of the first locomotives building at the Baldwin and American Locomo-

tive works. Following these field activities he returned to the factory as assistant foreman. Later he returned to field service in the southwestern territory, with headquarters in St. Louis. In 1910 he was made commercial representative in the electric railway field, becoming prominently identified in the development and introduction of the safety car equipment. Mr. Beck's study of electric railway operation has made him an authority on transportation problems.

John B. Wright has been promoted to assistant district manager in charge of the Pittsburgh office district. He was born on July 27, 1875, in Pleasantville, Pa., and received his education in the public schools there and at Central State Normal School, Lock Haven, Pa., graduating in 1896. He worked for about 18 months with the Cambria Steel Company, at Johnstown, Pa. In February, 1899, he entered the service of the Westinghouse Air Brake Co., at Wilmerding, Pa., as a clerk in the engineering department. After serving for some time as chief clerk in that department, he was transferred to the general office in charge of engineering correspondence, and later was made assistant to the vice-president. In May, 1919, he was appointed assistant southeastern manager.

A. K. Hohmyer has been promoted to the position of assistant western manager, Chicago, Ill. He was born in Pittsburgh, Pa., and attended the public schools of that city. In February, 1901, he started to work for the Westinghouse Air Brake Company, in the general office, as office boy. He passed rapidly and successively to the order department, engineering department, and other departments until February, 1909, when he was transferred to the Chicago office as office manager. He remained in that position until 1913, when he was appointed commercial representative. He continued to work in that capacity until January 1, 1920, the time of his promotion to assistant western manager.

Wm. G. Kaylor has been promoted to representative of the newly organized export department of the Westinghouse Air Brake Company, with headquarters in New York. He was born in Indianapolis, Ind., attending public school there and graduating from the Manual Training High School. He graduated from Purdue University in 1905, and entered the employ of the Westinghouse Air Brake Company at Wilmerding, Pa., as a special apprentice. The first year he served in the experimental and engineering departments, and the following year in field work, covering the equipment of electric locomotives for the New York Central at the various building plants throughout the east. He also installed the first air brake equipment on the all steel passenger cars in interurban New York City service. He acted as mechanical expert in connection with the introduction of electric service on the main lines of both the New York Central and New York, New Haven & Hartford railroads. After serving as assistant for several months to the resident engineer he became actively engaged in November, 1911, in commercial work, specializing in the traction brake field.

William R. Gummere, who for a number of years represented the **Independent Pneumatic Tool Company**, of Chicago, in Cleveland, Ohio, has again become affiliated with that company at the Pittsburgh branch, which is under the managership of Harry F. Finney.

Improvements and remodeling to cost approximately \$3,500,000 are being carried out at the car works of the **Pullman Company**. The improvements include a new three-story building of mill construction and a new press building, 80 ft. by 200 ft. The old foundry buildings are being remodeled to furnish additional space. The purpose of the improvements is to provide adequate facilities for the manufacture of automobile bodies.

The **Imperial Belting Company**, Chicago, has opened a special railroad sales department under the direction of **A. G. Pickett** as general manager. Mr. Pickett was formerly connected with the railroad and power specialties department of the H. W. Johns-Manville Company, New York City. The following sales engineers will be under the direction of Mr. Pickett: **Edward H. Willard**, **David L. Jennings** and **William D. Otter**, all formerly with the H. W. Johns-Manville Com-

pany; **William G. Willcoxon**, formerly associated with the Boss Nut Company, Chicago, and **Edward A. Woodworth**, formerly secretary of the Committee on Standards for Locomotives and Cars of the United States Railroad Administration. A new office has been opened in the Merchants' National Bank building, St. Paul, Minn., in charge of **Blake C. Hooper**.

The **Williams-Hayward Company** has been incorporated at Chicago for the manufacture of varnishes, enamels and paint specialties. **LeRoy A. Williams**, for 21 years associated with the railroad department of the Flood & Conklin Company, Newark, N. J., is president of the new company and **Oscar C. Hayward**, for 18 years manager of railroad sales of the Tousey Varnish Company, Chicago, is vice-president. **Otto Woldt** has been appointed head of the manufacturing department and **Max Huhnholz** superintendent of the enamel and paint specialties department. The company has purchased a modern varnish factory with a capacity of approximately 500,000 gal. of varnish annually, to which complete mills for the manufacture of enamels and paint specialties have been added. The main offices of the company and its plant are located at 2526 West Van Buren street, Chicago.

Fairbanks, Morse & Co., Chicago, have changed from a closed to an open corporation and have changed the company's capitalization from 25,000 shares of common stock of \$100 par value, representing assets of \$20,000,000, to 325,000 shares of no par value. The present stockholders will receive ten shares of new stock for each old share now held. Of the remaining 75,000 new common shares, 50,000 will be issued at once, an initial offering to employees of 12,500 having been oversubscribed, and 37,500 shares having been purchased by a Chicago brokerage concern, which will offer that amount publicly. The final 25,000 shares of new stock will be reserved for subscription by employees and for future financing. Fairbanks, Morse & Co. was founded in 1858 and this is the first time in its history that outside capital has been taken into the business and employees been given an opportunity to purchase stock of the company. Upon completion of the present financing, the net assets behind the new common stock will be \$23,687,500, or \$78.95 a share, exclusive of good will and other intangible items.

Trade Publications

BLAWFORMS.—The Blaw-Knox Company, Pittsburgh, Pa., has issued a small illustrated folder showing, through the medium of photographs and descriptive matter, the various types of concrete construction work where Blawforms have been used, and conveying a general idea of their application to such classes of work.

W. C. K. CITY.—Westinghouse, Church, Kerr & Co., engineers and constructors, New York City, have recently issued an eight-page folder which contains a large composite illustration of all the different classes of structures which were designed and constructed in their entirety by this company. The balance of the folder is devoted to a description of these and other classes of construction work that have been done by this company on a cost plus basis.

AUXILIARY DEVICES GOVERNOR.—Instructions for the installation and care of the auxiliary devices governor have been published for distribution by the Westinghouse Air Brake Company, in a 12-page booklet bound with stiff covers and designated as General Instructions No. 2360. The construction and operation of the governor is described and is supplemented by sketches with the parts numbered and named. Instructions are also given for adjusting the pressure.

BOILER FEED CONTROL.—A 24-page booklet entitled *Saving Fuel Automatically and Scientifically in the Boiler Room* has been published by the Northern Equipment Company, Erie, Pa. It is based upon matter that was prepared for the United States Fuel Administration during the war and compares hand and mechanical feeding with mechanical regulation, as performed by the Copes regulator, being illustrated with a number of charts and diagrams to emphasize the value of scientific control.

Financial and Construction

Railway Financial News

CHICAGO GREAT WESTERN.—A meeting of the stockholders of the Chicago Great Western has been called for April 6 to consider the question of the consolidation of the Wisconsin, Minnesota & Pacific with the Chicago Great Western. The Wisconsin, Minnesota & Pacific extends from Winona, Minn., to Mankato with a branch to Osage, Ia., a total mileage of 277 miles. All of its stock is now owned and held in the treasury of the Chicago Great Western, which formerly operated the road as lessee under an agreement which provided that the surplus earnings should be paid over to the parent company, the latter guaranteeing the payment of interest on the bonds of the subsidiary to the extent of such interest. In 1912 the net earnings of the Wisconsin, Minnesota & Pacific were not sufficient to pay the interest on its \$6,232,000 first mortgage bonds and the coupons due October 1, 1912, were not paid. In July, 1913, the Chicago Great Western offered to the holders of these bonds 50 per cent in its own 4 per cent, first mortgage bonds and 50 per cent in preferred stock together with cash in payment of all defaulted coupons with accrued interest. Practically all of the bonds were thus exchanged.

CHICAGO & NORTH WESTERN.—The stockholders are asked to authorize at a meeting April 13, a first and refunding mortgage to secure bonds not to exceed three times the outstanding stock of the company due May 1, 2037. These bonds may be issued from time to time by the board of directors to retire the present indebtedness of the company and to provide for future capital needs. Stockholders are also asked to authorize the purchase of the Wolf River Valley, the Belle Fourche Valley, the Macoupin County Extension, the Iowa Southern, the Missouri Valley & Blair Railway & Bridge, the Wyoming & North Western, the Pierre, the Rapid City & Northwestern, the Pierre & Fort Pierre Bridge, the De Pue, Ladd & Eastern and the Albany Rail Road Bridge, all now controlled through the ownership of the entire outstanding stock.

GRAND TRUNK.—Sir Alfred Smithers, chairman of the board of directors, has called a meeting of the shareholders on February 19 at London, England, to ratify the agreement made with the Canadian government for the acquisition of the Grand Trunk Railway System.

NORTHERN OHIO.—This railroad, now a part of the New York Central System, being leased to and operated by the Lake Erie & Western, is to be taken over by the Akron, Canton & Youngstown, an agreement having been made by the directors of the Lake Erie & Western and those of the Akron, Canton & Youngstown, to transfer the lease to the latter, after the return of the railroads to their owners by the government. The lease is for 999 years from April 1, 1895. The road came into the control of the New York Central, along with the Lake Erie & Western, about 20 years ago. It extends from Akron, Ohio, westward 162 miles to Delphos. The Akron, Canton & Youngstown, according to the Official Guide, operates only about 8 miles of line, but it has extensive terminal properties in Akron. The new acquisition will give it a connection with the Cleveland, Cincinnati, Chicago & St. Louis, at New London, 53 miles west of Akron, and with the Toledo, St. Louis & Western at Delphos.

RICHMOND, FREDERICKSBURG & POTOMAC.—A special commission representing the interests of the state of Virginia has formally approved the merger of the Washington Southern Railway with the Richmond, Fredericksburg & Potomac Railroad under the name of the latter company. The effect of the merger is practically a purchase of the Washington Southern, which operates 88 miles of the Richmond-Washington line between Quantico, Va., and the south end

of Potomac Bridge, including the Potomac yards, at a price of \$8,000,000. The road is estimated by the special commission to be worth more than \$10,000,000.

TEXAS STATE RAILROAD.—Bids will be received by the Texas Board of Prison Commissioners, Huntsville, Tex., for the purchase or lease of the Texas State Railroad, extending from Rusk, Tex., to Palestine, and containing approximately 36 miles of track, together with all property belonging thereto, including rights of way, tracks, depot, sites and buildings, rolling stock and other equipment. The bids are to be opened on March 1, on the following basis:

1. Unconditional purchase and subject to the obligation of the successful bidder to maintain and operate the line.
2. Unconditional purchase without obligation on the part of the successful bidder to maintain and operate the line.
3. Lease of railroad for a stated term of years.

The railroad will not be sold unless a cash payment is made at the time of the sale equal to the face value and accrued interest of bonds owned by the school funds of Texas against the Texas State Railroad.

WASHINGTON SOUTHERN.—See Richmond, Fredericksburg & Potomac.

WISCONSIN, MINNESOTA & PACIFIC.—See Chicago Great Western.

Railway Construction

CANADIAN PACIFIC.—President E. W. Beatty is quoted by Canadian papers as saying that the company desires to proceed this year with the construction of the branch lines in the prairie provinces which were begun last year, provided men are available to do the work. At present, however, the supply of labor seems to be decidedly short.

LONG ISLAND.—The New York Public Service Commission, First district, has ordered the Long Island Railroad to build a new bridge over Flushing creek, on the Port Washington branch, in Flushing.

SALT LAKE & DENVER.—The Utah Manufacturers' Association, at its fifteenth annual convention at Salt Lake City, January 14, adopted resolutions pledging the support of its members to this proposed railroad into the Uintah Basin, a description of which appeared in the *Railway Age* of January 16 (page 279). The action was taken immediately after an address on the construction of the line was made by R. S. Collett, a resident of the Uintah Basin.

CENTRAL WESTERN SHIPPERS ON RAILROAD LEGISLATION.—Representatives of several Western commercial organizations and associations at a meeting in Chicago have adopted and sent to the members of the Congressional Conference Committee the following requests and suggestions: (1) strike from the bill all reference to the creation of the so-called transportation board; (2) strike from the bill the provision requiring compulsory consolidation of the railroad systems; (3) agree to a rule for rate-making which shall provide for the grouping of the transportation systems into three groups for rate-making purposes conforming to the present three freight classification groups, and that the Interstate Commerce Commission, for a period not exceeding five years, shall adjust rates of carriers as a whole in each group so as to provide a net operating income of not less than 5½ per cent upon the aggregate value of the carriers as a whole in each group, without any division of excess earnings of individual carriers about 5½ per cent, and (4) adopt the labor and anti-strike provisions of the bill. The meeting was attended by representatives of the Wisconsin Manufacturers' Association, the Indiana Manufacturers' Association, the Michigan Manufacturers' Association, the St. Paul Association, the Rockford (Ill.) Manufacturers' & Shippers' Association, the Chicago Furniture Manufacturers' Association, the American Furniture Manufacturers' Association, the Illinois District Traffic League, the Michigan Traffic League, and the Illinois Manufacturers' Association.

Railway Officers

Railroad Administration

Operating

H. D. Mudgett has been released from military service and has resumed his position as trainmaster of the Montana division of the Northern Pacific.

W. B. Foster, general superintendent of the Lines West of the Chicago, Milwaukee & St. Paul, with headquarters at Seattle, Wash., has resigned to engage in other business. No successor has been appointed.

H. J. Councilman has resumed his duties as trainmaster on the Northern Pacific, with headquarters at Duluth, Minn., succeeding **Frank L. Birdsall**, who has been transferred to Jamestown, succeeding **J. J. Mulroy**, assigned to other duties.

G. A. VanDyke, superintendent of terminals of the Chicago, Milwaukee & St. Paul, with headquarters at Minneapolis, Minn., has been appointed superintendent of the Twin City Terminals division, with the same headquarters, succeeding **E. F. Rummel**, acting superintendent, who has been appointed trainmaster of the River division, with headquarters at Minneapolis, succeeding **M. T. Skewes**, assigned to other duties.

M. C. Blanchard, division superintendent of the Atchison, Topeka & Santa Fe, with headquarters at Marcelina, Mo., has been transferred to Chillicothe, Ill., succeeding **R. H. Allison**, whose promotion to assistant general manager was announced in the *Railway Age* of January 30 (page 396). **C. L. Mason**, division superintendent at Kansas City, Mo., has been transferred to Marceline, succeeding Mr. Blanchard, and **H. M. Duncan**, terminal superintendent at Chicago, has been transferred to Kansas City, to succeed Mr. Mason. **C. E. Taylor**, of the Terminal Efficiency Committee of the United States Railroad Administration, with headquarters at Chicago, has resumed his former position at Chicago, succeeding Mr. Duncan.

Financial, Legal and Accounting

W. E. Bacon, federal auditor of the Chicago, Terre Haute & Southeastern, with office at Chicago, has resigned to engage in other business.

Traffic

F. W. Bale, assistant general freight agent of the Buffalo, Rochester & Pittsburgh, has resigned.

Engineering and Rolling Stock

B. H. Bryson, first engineer on the Fort Dodge, Des Moines & Southern Railroad, with headquarters at Fraser, Iowa, has been appointed chief engineer of that road with the same headquarters.

Egnar Johnson, acting roadmaster on the Houghton division of the Duluth, South Shore & Atlantic, with office at Marquette, Mich., has been appointed roadmaster, with the same headquarters.

H. O. Kelley, assistant engineer of the Wabash at St. Louis, Mo., has been appointed division engineer, with the same headquarters, succeeding **D. C. Bowman**, who resigned to become chief engineer of the Industrial Track Construction Company, of St. Louis.

F. P. Patenall, signal engineer on the Baltimore & Ohio, Eastern Lines, with office at Baltimore, Md., has had his jurisdiction extended over the Western Lines. **E. T. Ambach**, engineer of signals on the Western Lines, with office at Cin-

cinnati, Ohio, has been appointed assistant signal engineer, Western Lines, as a result of this extension of jurisdiction.

C. H. Chambers, road foreman of engines on the Atchison, Topeka & Santa Fe, with office at Las Vegas, N. M., has been appointed assistant air-brake instructor, with headquarters at La Junta, Col., succeeding **M. O. Davis**, who has resigned. Mr. Chambers will have jurisdiction over the Western, Arkansas River, Colorado and New Mexico divisions.

C. D. Peckenpaugh, who was temporarily assigned to other duties, has been reappointed to his former position as superintendent of the Aurora division of the Chicago, Burlington & Quincy, with headquarters at Aurora, Ill. **E. J. Worden**, acting superintendent of the Aurora division, has resumed his position as superintendent of the La Crosse division, with headquarters at La Crosse, Wis., and **F. E. Haines**, acting superintendent of the La Crosse division, has been reappointed to his former position as assistant superintendent of the Ottumwa division with office at Ottumwa, Iowa.

Special

C. A. Conner has been appointed traveling engineer and trainmaster of the Green River division of the Denver & Rio Grande, with office at Helper, Utah, succeeding **C. H. Wilcken**, who has resigned.

Corporate

Executive, Financial, Legal and Accounting

W. H. White, assistant general manager of the Boyne City, Gaylord & Alpena, has been elected president, with headquarters at Boyne City, Mich.

E. H. Alden, whose election as vice-president in charge of finances of the Norfolk & Western was announced in the *Railway Age* of February 6 (page 460), was born in Bridgewater, Mass., in 1866. He began railroad work in March, 1891, as chief clerk to the secretary of the Norfolk & Western and has given his entire service to that company. When **A. J. Hemphill**, secretary and assistant treasurer, resigned in March, 1905, Mr. Alden was chosen his successor and held that position until his recent election. In addition, he has served for six years on the executive committee of the Society of Railway Financial Officers and was president of the society in 1916 and 1917.



E. H. Alden

Milton H. Smith, who has served as president of the Louisville & Nashville under federal control, will continue in that capacity when the road is returned to private ownership; **W. L. Mapother**, federal manager of that road, will resume his former position as vice-president.

B. F. Bush has tendered his resignation as regional director for the Southwestern region and has been elected president of the Missouri Pacific, the office which he held prior to federal control, effective upon the termination of his connection with the Railroad Administration.

P. F. Finnegan has been elected a vice-president of the Union Tank Car Company in charge of its car service de-

partment; all correspondence relative to the movement and operation of the Union Tank Car Company's cars heretofore addressed to **E. C. Sicardi** should in future be addressed to Mr. Finnegan at 21 East 40th street, New York.

L. W. Baldwin, regional director of the Allegheny region and formerly vice-president and general manager of the Central of Georgia, will resume the duties of vice-president when the road is returned to private ownership. A sketch and photograph of Mr. Baldwin were published in the *Railway Age* of September 26 (page 662) when he succeeded Mr. Markham as regional director.

W. T. Tyler, director of the Division of Operation of the United States Railroad Administration, who has been elected vice-president in charge of operation of the Northern Pacific,



W. T. Tyler

as announced in *Railway Age* of February 6 (page 460), was born at Janesville, Wis., on July 29, 1870. He entered railway service in June, 1883, as a messenger on the Wisconsin Central and was later an operator and despatcher on the same road. In 1889 he was employed as a brakeman on the Milwaukee, Lake Shore & Western, now a part of the Chicago & Northwestern. From that time until 1891, he was brakeman and conductor for the Northern Pacific, and from 1891 to 1900 was, consecutively, yardmaster, trainmaster and superintendent of the Great Northern. Appointed superintendent on the St. Louis, Iron Mountain & Southern in 1900, he was promoted to general superintendent of the same road the following year. The following eight years he was, successively, general superintendent and general manager of the St. Louis & San Francisco. In 1915 he became superintendent on the Northern Pacific, with headquarters at Pasco, Wash., and on February 1, 1917, was appointed general manager of the St. Louis Southwestern. On May 15, 1917, was elected first vice-president of this road and on November 1, 1917, resigned to become assistant to the vice-president in charge of operation of the Northern Pacific. On January 22, 1918, Mr. Tyler was appointed assistant to the director to the Division of Operation with headquarters at Washington and was appointed senior assistant director on July 1, 1918. Mr. Tyler succeeded Carl R. Gray as director of the Division of Operation on January 15, 1919, in which capacity he has served up to the present time, and in which will continue until March 1, when the roads will be returned to private control.

Operating

H. T. Hamilton has been appointed assistant manager of the Nacozari Railroad, with headquarters at Nacozari, Sonora, Mex.

C. A. Phelan, operating assistant of the Allegheny region for the Railroad Administration, whose resignation was announced in the *Railway Age* of January 23 (page 336), has been appointed general manager for the receiver of the Missouri & North Arkansas Railroad Company, with headquarters at Harrison, Ark.

L. H. White, general superintendent and car accountant of the Boyne City, Gaylord & Alpena, has been appointed general manager, with headquarters at Boyne City, Mich., succeeding **F. O. Barden**, resigned; **Clark Haire** has been appointed general superintendent, succeeding Mr. White and **F. J. Beals**, assistant car accountant at Boyne City, has been appointed superintendent of car service, with the same headquarters.

Traffic

A. J. Poston has been appointed general agent of the passenger department of the Southern Pacific Lines, with headquarters at New York.

G. J. Brady has been appointed assistant general agent of the freight department of the Southern Pacific Lines with headquarters at New York, effective March 1.

M. Dailey, general manager of the Chicago & Illinois Midland, has also been appointed traffic manager with headquarters at Taylorville, Ill., succeeding **H. H. Seaverns**, deceased.

J. C. Murray has been appointed general freight and passenger agent for the receiver of the Missouri & North Arkansas Railroad Company, with headquarters at Harrison, Ark.

C. M. Evans has been appointed assistant general freight and passenger agent of the Southern Pacific Atlantic Steamship Lines, "Morgan Line," with headquarters at New York, effective March 1.

E. C. Elliott has been appointed district passenger agent of the Grand Trunk, with headquarters at Bonaventure Station, Montreal, Que., succeeding **Joseph Quinlan**, granted leave of absence previous to his retirement April 1, under the pension act of the company.

C. S. Fay, general freight agent of the Southern Pacific Lines for the Railroad Administration, has been appointed general freight agent of the New Orleans-Havana Line and southern freight agent of the New York-New Orleans Line, with headquarters at New Orleans, La., effective March 1.

William Simmons has been appointed general freight and passenger agent of the Steamship Lines of the Southern Pacific operating between North Atlantic and Gulf ports—"Morgan Line"—with headquarters at New York, effective March 1. **C. M. Evans** has been appointed assistant general freight and passenger agent, with the same headquarters, and becoming effective the same date.

J. T. Monroe, general passenger agent of the Southern Pacific Lines and the Lake Charles & Northern, for the Railroad Administration, at New Orleans, La., has been appointed general passenger agent of the New Orleans-Havana Line and the New York-New Orleans Line of the Southern Pacific, with the same headquarters, effective March 1. **F. L. Pickering** has been appointed assistant general agent of the passenger department, with headquarters at New York.

G. G. Herring has been appointed general agent of the Southern Pacific Lines, with headquarters at Pittsburgh, Pa. The following have also been appointed general agents: **F. T. Brooks**, with headquarters at Philadelphia, Pa.; **L. C. Bouchard**, at Memphis, Tenn.; **S. C. Chiles**, at 165 Broadway, New York; **C. T. Collett**, at St. Louis, Mo.; **H. F. Kern**, at Kansas City, Mo.; **L. B. Banks**, at Denver, Colo.; **W. W. Hale**, at Detroit, Mich.; **F. E. Scott**, at Cincinnati, Ohio; **C. L. McFaul**, at Chicago, Ill.; **J. H. Glynn**, at Boston, Mass.; **S. J. Brown**, at Birmingham, Ala.; **W. B. Johnson**, at Baltimore, Md.; **D. Asbury**, at Atlanta, Ga. The appointments become effective March 1.

Obituary

Fred Mertsheimer, formerly general superintendent of the Mexico & Orient, died in Kansas City January 29, at the age of 73.

Richard I. Wilby, formerly engineer maintenance of way of the Toledo, Peoria & Western, died in Deerfield, Mass., January 11.

Col. Le Grand Cannon, vice-president and general manager of the Nevada Northern, died on January 26, at East Ely, Nev., at the age of 72 years.

M. J. Brew, division engineer of the Chicago Terminal division of the Chicago, Rock Island & Pacific, with headquarters at Chicago, died on February 3, at his home.

EDITORIAL

Railway Age

The Table of Contents Will Be Found on Page 5 of the Advertising Section

The comments made in the *Railway Age* editorial columns two weeks ago relative to the rising barometer of the railway

The Rising Barometer

supply field as represented by the Equipment and Supplies column of this paper have been borne out so far in February rather better than was expected. During the month of January orders were reported in the column for 32 locomotives, 6,220 freight cars and 25 passenger cars for domestic service and 213 locomotives and 1,080 freight cars for export. The orders reported in the first two issues only of February—that is, excluding the present issue—already show orders for 97 locomotives for domestic service and 55 for export, while in the present issue there will be found reference to orders for a number in addition. The orders for freight cars have not been so encouraging. In the first two issues orders were reported for 336 freight cars for domestic service and 480 for export and for 35 passenger cars for domestic service. Indications that the buying movement that is expected to come with the return of the railroads to private control is momentarily gaining headway, are, however, shown by a reference to the inquiries that have recently been issued. In the first two issues of February such inquiries were reported for 62 locomotives, 75 passenger cars and no less than from 6,100 to 7,100 freight cars for domestic service. Further than that these totals will be augmented by a number of items that are reported in this week's issue, including particularly an inquiry for 2,028 refrigerator cars for the American Refrigerator Transit Company and one for from 122 to 222 passenger train cars for the New York Central. As was noted in the previous editorial the totals have thus far not been surprisingly large, but they are nevertheless sizeable and the number of inquiries and the many sources from which they come are very favorable indications. It is safe to say that the barometer has only begun its upward rise.

To run "under control" may mean a speed of from one mile an hour anywhere up to 40 miles an hour. A general manager,

"Under Control" in a Smoky Tunnel

writing to the editor in connection with our recent discussion of the protection of work trains (*Railway Age*, January 9, page 155), calls attention again to the importance of educating trainmen in this matter. So elastic a term needs frequently to be restated, and a good many enginemen and conductors need to be jogged by the trainmaster; they are not likely to do much self-education wholly from their own volition. The point is again brought to mind by the West Philadelphia collision, reported in another column of this issue. In that case a passenger train had to move under control through a tunnel so filled with smoke that practically the engineman could not see beyond the front end of his engine. This collision occurred 200 ft. outside of the tunnel, and the government inspector thinks that if the speed had not been over 10 miles an hour (the rate at which the engineman professed to believe he had been running) the bump would have been averted. Inside the tunnel, however, if we accept the testimony of the flagman who tried to stop the oncoming train, 10 miles an hour would have been a dangerous rate. Even

at one mile an hour it would no doubt have been necessary, in that smoke, to depend on somebody's hearing instead of the engineman's eyesight to avoid bumping a standing train. In short, we may say that in a smoke-filled tunnel the term "under control," insofar as it depends on the engineman's use of his eyes, is out of the question. The absolute block system is the only rule that can be called entirely safe. The rules might require that the flagman of a standing train should always be able to give notice of the presence of his caboose (if not in motion) at least 100 ft. away, but there would be much difficulty in carrying out even that simple rule. The principle of putting the whole of the responsibility on the engineman and none on the standing train is probably favored, over the rule of divided or duplicate responsibility, by the great majority of operating officers who decide the question wholly on the basis of reason, excluding questions of expediency; and therefore, again, the conclusion must be that the absolute space interval is the only satisfactory rule for running through tunnels which are liable to be filled with smoke.

There is constantly going on in this country organized propaganda for the adoption of the metric system of weights and

The Metric System

measures. The organizations which have endeavored to create this pro-metric sentiment have recently been very active, and it is expected that a bill will soon be introduced in the House, making the use of the metric system, and that only, compulsory in all departments of the government. There is no question that the pro-metric propagandists intend this merely as an entering wedge to commit Congress in favor of the metric system and the bill, if passed, would no doubt be followed by drastic compulsory metric legislation for the whole country. Members of the House of Representatives and the Senate have received a deluge of communications urging the enactment of metric legislation, and in the absence of opposition, the legislators may form the opinion that there actually exists a widespread sentiment in favor of the substitution of metric weights and measures for our present system. However, investigation has disclosed that the greater part of the communications sent to legislators have been inspired by a campaign conducted by the so-called World Trade Club of San Francisco. This organization, we are reliably informed, is not a club in the ordinary sense of the term, the name being adopted merely to add prestige to a movement being carried on by a wealthy man who has made the metric system his hobby. Thus the artificial sentiment has been created almost solely by one individual and does not represent the views of manufacturers or responsible business men in this country. Regardless of the questionable methods that have been adopted to manufacture pro-metric sentiment, it will be well to consider the metric system on its merits. It was first adopted in France by drastic legislation enacted in 1793. The law was repealed by Napoleon in 1812, and even though the metric system had been in force for 19 years the people soon resumed the use of their old system of measures. In 1837 the metric laws were reinstated, with the omission of